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JOURNAL

CCJ

READER DIGEST

Fuel & Lubricant Tests for Light Engines

Everyone talks about lubricating problems with heavy-duty or high temperature operation, but until recently very little thought has been given the light load, low temperature service. Gulf Oil Corp. has conducted a series of tests to show the effects of fuel, operating conditions, oil filters, and additives on engine deposits in light duty operation. Results are shown in actual photographs of engine parts and in test data, Page 68.

Rapes of Wrath

Much has been said about the AASHO Code with respect to truck sizes and weights. The author of this article summarizes the pro and con arguments, and suggests a compromise of handling the problem on a regional basis. Of particular importance to all truck and bus operators are the statements of position of industry associations and government agencies which, in the last analysis, will be most influential in any ultimate legislative changes. See Page 51.

Are Your Brakes Truly Balanced?

If you have air brakes, this article is "must" reading. It is not an elementary how-to-do-it article. It deals with some puzzling questions and problems about which little has been said. For example, after bringing a set of brakes up to manufacturer's specification, the author found that they were not truly balanced. Search for the cause revealed several discrepancies responsible for previous brake troubles. After solving the problem, lining life jumped 62 per cent and costs dropped proportionately. See Page 62.

Flexible Program Boosts Bus Life

In any discussion of PM programs, there always are questions as to what mileage schedules are best for a particular fleet. Torrens Smith of Louisville Railway points out that mileage intervals should be flexible, with higher mileage goals adjusted as part quality and maintenance skill improves. This is what he practices. He proves the value of this system by pointing out appreciable mileage increases on his property for various components, a reduction in road calls, and lower overall maintenance cost—to mention just a few items. See Page 52.

200 Fleets Get Maintenance Awards

Awards for merit and excellence of maintenance in accordance with national standards established by CCJ's Board of Experts have been made to 200 fleets. The standards have been developed as a result of the surveys made for The Fleet Operators' Experience Handbook. For the story behind the Board of Experts and the names of the award winners, see Page 56.

Streak-Free Bus and Truck Washing in LESS TIME

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FOR THE TRUCKING INDUSTRY

CONFERENCE CORNER

PRESENTING FACTORY ENGINEERS' VIEWS ON TIMELY SUBJECTS OF INTEREST TO FLEETS

Subject: Chassis Dynamometers

Question: When and Where Do They Pay Off?

Otis Presbry, of Otis Provetest, says . . .

"The actual ability of a vehicle to perform its given work should be the basis of any intelligent maintenance program. To accurately measure the road performance of a vehicle, a shop chassis dynamometer provides the most complete and accurate readings far more quickly than any outdoor road test could supply.

"When performance standards are set, including all operating parts of the vehicle, a rapid test on the dynamometer will prove the present condition of the vehicle being tested, and when these figures are compared to the standards previously set, a definite requirement for the repairs or replacements is established.

"If inspectors' time spent in locating troubles could be greatly reduced and, in addition, a proof, by performance, is established, the more frequent tests required for preventive maintenance will be available at a low unit cost. A well established preventive maintenance program provides marked savings in parts replacement, life of clutches, brakes and tires, as well as fuel and lubricants consumed. Better acceleration is obtained by more accurate adjustments. Safety is enhanced by better steering and properly equalized brakes. Vehicle life is greatly extended by the intelligent control of operating parts showing any de´ects upon inspections.

"The present record of electric chassis dynamometer in use and properly applied, shows a minimum all around saving of 12½ per cent, including all-over maintenance costs, life extension of vehicles, and reduced fuel consumption. This pays for the cost of the dynamometer and any consulting expense in connection with it, many times over."

E. L. Cline, of Clayton Mfg. Co., says . . .

"It is only good sense when testing a vehicle to operate it under normal working conditions. With most machines, this poses no problem, but a car or truck travels while it works. This leads to many complications.

"At first glance, the obvious answer is road-testing. However, road-testing has three main disadvantages:

"1. Too much time required for the average fleet to road-test all vehicles in for engine or drive-line repairs.

"2. No accurate measurement of performance.

"3. Impossible to make adjustments while the vehicle is operating on the road.

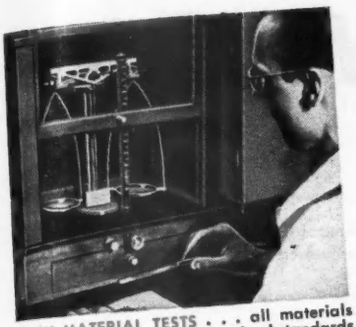
"The chassis dynamometer provides all the advantages of road-testing, yet overcomes the disadvantages, all within the confines of one working stall. There are no traffic hazards or traffic cops. Hills are as long and steep as needed. Speed is measured in miles per hour and performance in road horsepower (actual horsepower delivered at the rear wheels).

"A chassis dynamometer is simply a machine which simulates all important street or highway grade conditions and shows the vehicle's ability to perform on the road. Its job is to test all functions of the engine, transmission, drive line, live axles, rear wheels and rear tires exactly as they operate on the road.

"Use of a chassis dynamometer yields economies in four phases of vehicle maintenance: Diagnosis, checking repairs, periodic inspection, and making final adjustments. A 2-year chassis dynamometer test program resulted in the following savings:

"1. Fuel economy improved 8 to 10 per cent.

(TURN TO PAGE 152, PLEASE)



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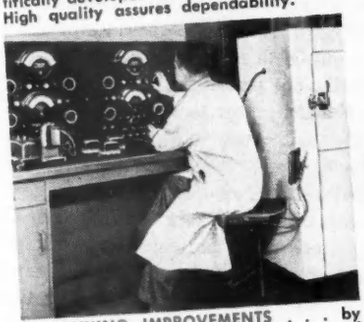

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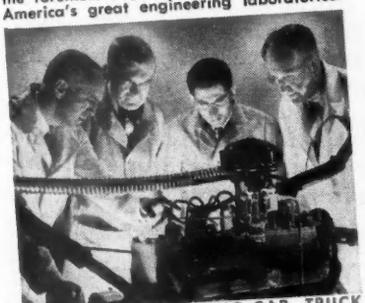

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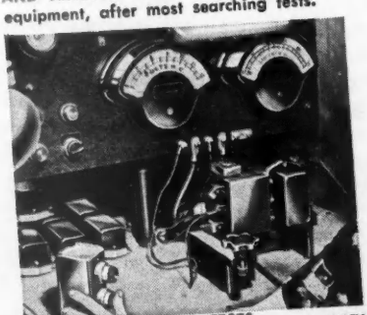

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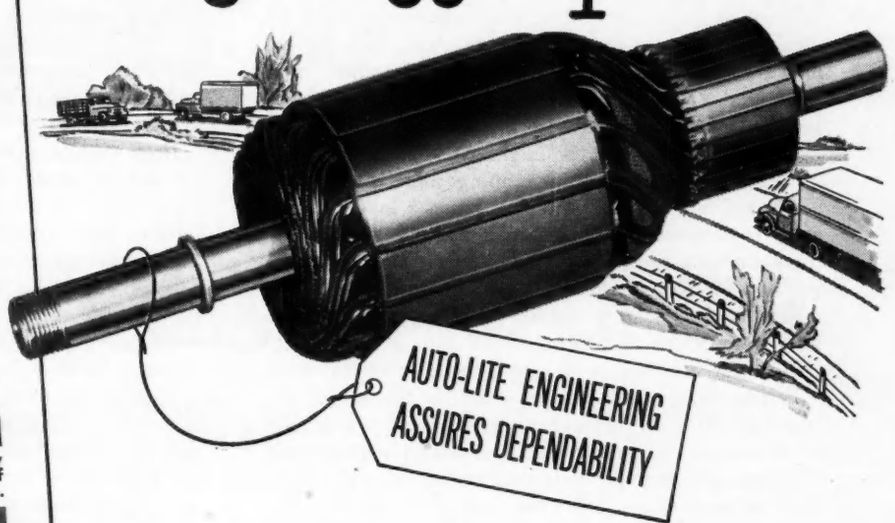

● Reducing service repairs in your fleet frees your trucks for more important uses . . . and brings you bigger profits. Because repairs are costly, it pays to insist on the tested quality of original factory parts that assure efficient performance and usually COST NO MORE. The dependability Auto-Lite Original Factory Parts afford your expert service men is proved by this fact: more than half of America's car makers specify Auto-Lite. For complete information, write to

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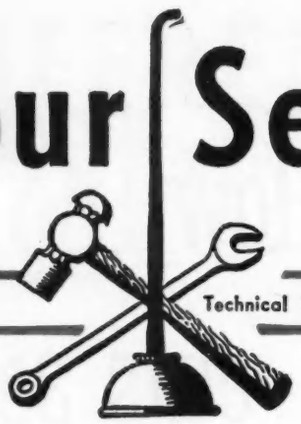

By M. K. SIMKINS
Technical Editor, Commercial Car Journal

Hydraulic Valve Noises

Engines equipped with hydraulic valve lifters usually have quiet valve trains, but upon occasion, especially after the engine has set for some time, valve noises may show up due to the fact that oil has escaped from the lifters. This, of course, is natural and should not be considered excessive noise.

Other noises, however, might be classed in three separate categories: loud, rapping noises; clicking; and noise throughout the train. When a loud rapping noise is detected, check to see if the plunger has become stuck in the bore so that the return spring cannot seat it. This condition is caused by excessive varnish deposits or by a galling of the plunger or follower bore.

A slight clicking is due to a leaking check valve which permits a too rapid escape of the oil in the reservoir. If the clicking is intermittent, it can usually be traced to dirt in the lubricant which momentarily is caught between the ball seat and check valve ball. Such an obstruction holds the ball off its seat so that the cushioning effect of the lifter assembly is nullified.

Noise occurring throughout the system is generally the result of insufficient oil circulation, or foreign matter or varnish accumulations. This condition is sometimes caused by a poor grade of oil which permits a varnish formation and necessitates the disassembly and cleaning of the entire mechanism.

To locate a noisy valve lifter, place a finger on each valve cap. A smooth action shows that the valve lifter is operating properly, but if a distinct shock is noted when the valve returns to its seat, you can bet on a sticking lifter.

Defective Diaphragms and Oil Hogs

Don't forget to check the diaphragm in the vacuum booster pump when your trucks are getting away with too much oil. When this diaphragm is cracked or broken, oil will be drawn direct from the pump into the intake manifold, causing smoky exhaust and excessive oil consumption.

To check the condition of the pump, accelerate the engine and watch the action of the windshield wiper blades. If the blades stop, it is an indication that the diaphragm is defective. A positive check is to disconnect the vacuum line and run the engine several minutes. If the smoke at the exhaust increases, a new diaphragm should be installed.

Check Up on Ignition Point Failures

When breaker points turn bluish-black in color with white marks around the sides of the tungsten, the trouble is excessive voltage in 60 per cent of the cases. Obviously the cause of the failure must be diagnosed and the condition remedied if new points are expected to give satisfactory mileage.

High voltage is often due to a corroded battery terminal which produces high resistance in the line. In many cases oxides forming on the inside of the battery terminal introduce sufficient resistance into the charging circuit to cause the generator to develop excessive voltage. In much the same way a defective ground between the engine and frame causes excessive voltage build up. A sulphated battery, also, will cause the generator voltage to increase beyond safe limits. And, of course, one of the most prevalent causes of high voltage is simply a high charge rate, boosted to overcome heavy drawing on the battery during winter starting, with the constant use of lights, or when too many accessories have been connected into the line.

Other causes of point burning can be attributed to an over or under-capacity condenser, to oil and grease burning on the points, to a defective ground between distributor and engine, to loose connections anywhere in the ignition circuit. Improper cam angle, worn distributor shaft, loose distributor bearings and improper spring tension will also contribute to early point failures.

This Thing Called Torque

Any high school physics book will tell you that given long enough lever one man could raise the earth. But that point isn't always remembered in the fleet shop when a strong arm meets a small bolt. A mechanic's interpretation of "tight" will vary all over the scale, while the results of miscalculations with a wrench will be evidenced in warped cylinder heads, distorted bores, cocked valve seats and stretched bearing bolts. The result will be written up in terms of road failures, high operating costs and shops crammed with overhaul jobs.

In many PM forms you come across the entry, "Tighten hose clamps" . . . "Tighten cylinder head bolts" . . . "Tighten body bolts" . . . and so on. So the mechanic does just that. He gives them half a turn just to make sure and then wonders why they

(TURN TO PAGE 14, PLEASE)

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WAGNER CoMaX BRAKE LINING
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Take a tip from fleet owners who can speak from experience — you'll get more mileage before relining is necessary when you use Wagner CoMaX Brake Lining. It does not compress under brake pressure or deteriorate with age. It is made of special uniform-textured material with no abrasive elements to score drums.

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At Your Service

Continued from Page 10

are loose again next morning or next time the truck is in. Of course this is due to the stretching of the bolts past the elastic limit of the steel, so that they took a permanent set in the elongated position.

Actually there are very few times when head bolts, hose clamps, assembly studs and cap screws need to be tightened—once they have been seated and pulled down properly. Unless there is definite leakage, looseness, evidence of movement in the assemblies, DON'T tighten. Simply check.

A torque wrench should be used when you have torque specifications given in your manual. But torque specifications can be misleading, and you can get variation as much as 10 per cent due to several factors. The material used, the fitting tolerance of the threads and plating, of course, are controlled by the design, but lubrication and foreign material on the threads are controlled by the mechanic.

It is well to remember that the condition of the threads will affect the torque reading, that a very tight thread fit will require more lb-ft pull than a loose fitting thread to get the same degree of tightness of the nut. Bolts which operate in oil should be oiled before torquing, while those operating dry should be cleaned before torquing. Grease and foreign material should be removed from mating surfaces because dissipation of this material and movement between the parts due to reduced friction may result in loosening of the cap screws or nuts.

The following of a pattern or sequence in tightening critical assemblies is standard procedure in most shops. Recommendations provided by each manufacturer for tightening the cylinder heads will insure that the head is "ironed out" from the center so that danger of distortion is reduced. It is equally important that manifold nuts be tightened uniformly and to a specified torque. There are probably more cases of stripped threads, warped manifolds and ill-fitting gaskets due to overtightening than to undertightening, and either case is due to improper use of a wrench torque in mounting the assembly.

Con rod bolts and main bearings are equally as critical though not as often slighted as are other parts.

Remember next time you pick up a wrench torque. It will save you a lot of trouble—if used properly. It is not fool-proof, however, and will still require some common sense in pulling down critical assemblies.

Fitting Suspension Parts

There is considerable amount of doubt on the part of mechanics and fleet operators as to what constitutes a correct fit of threaded front suspension parts, according to Norman Hoertz, of Thompson Products, Inc.

For ease of steering and quiet operation there must be a minimum of .012 clearance between these threaded parts, he says. There is a misconception that this necessary clearance between the threaded parts may cause noisy operation. Actually, just the opposite is true since this clearance.

1. Provides for free entry of lubricant.
2. Eliminates harshness and break-away noises that occur in tight fitting parts.
3. Compensates for minor deflection and misalignment.
4. Minimizes wear.

The common mistake that is made in checking threaded suspension parts is to shake them up and down when they are out of the vehicle. When checked this way, if the fit is correct, they *should* feel loose. However, when installed, lateral clearance in the threads will be taken up by the vehicle load. For good operation, threaded suspension parts should be installed as an assembly. Minimum thread clearance for best operation should be .012.

Watch High Amperage Generators

Nearly all 1950-51 passenger cars use higher output generators ranging from 40 to 45 amperes and in some cases to 50. Thus heavier gage wire must be used in the current carrying circuit of the regulator, and when old regulators are rewired to the new units, No. 9 wire must be used. However, manufacturers do not recommend this modification as this procedure may result in overloading and overheating the current-carrying portion of the regulator and damage it.

If you replace the regulator on a newer model fleet car and a high output regulator is not available, use a 36 amp regulator as is rather than readjust to the higher amperage. This will result in a loss of only 4 amperes with a 40 ampere generator. But if you readjust the lower amperage regulator to the higher output rate, you run a chance of burning out the regulator.

Fuse Chart Available

A fuse chart which requires no code to interpret and which shows the fuses for all makes of cars beginning with 1940 and including all the 1951 models, is available free of charge to automotive jobbers and repair men. Write Littelfuse Inc., 4757 N. Ravenswood Ave., Chicago 40, Ill.

Oil Tests Show Quality, Source

Lubricating oil research has turned up some interesting facts with regard to testing oil to determine its quality and its source. In a move to protect the buyer, the Pennsylvania Crude Oil Assn. has developed a series of test procedures which show the quality of the oil, whether it is from Pennsylvania crudes, from other fields or a mixture of the two. Differences in samples taken at random are made plain by infrared spectrophotometry, precision density calculations and refractive index measurements.

Ears to the Ground Department

Skid detective devices designed to stabilize aircraft during breaking may have possible applications for trucks and buses, according to a recent report from a government agency. These devices now are used on all B-47 and B-51 planes to keep them on the straight and narrow no matter how hard the pilot applies the brakes. The unit is described as a device which senses a skid and releases pressure on the brakes until the skidding condition stops, thus limiting skids to a fraction of a second, reducing tire wear and cutting landing roll.

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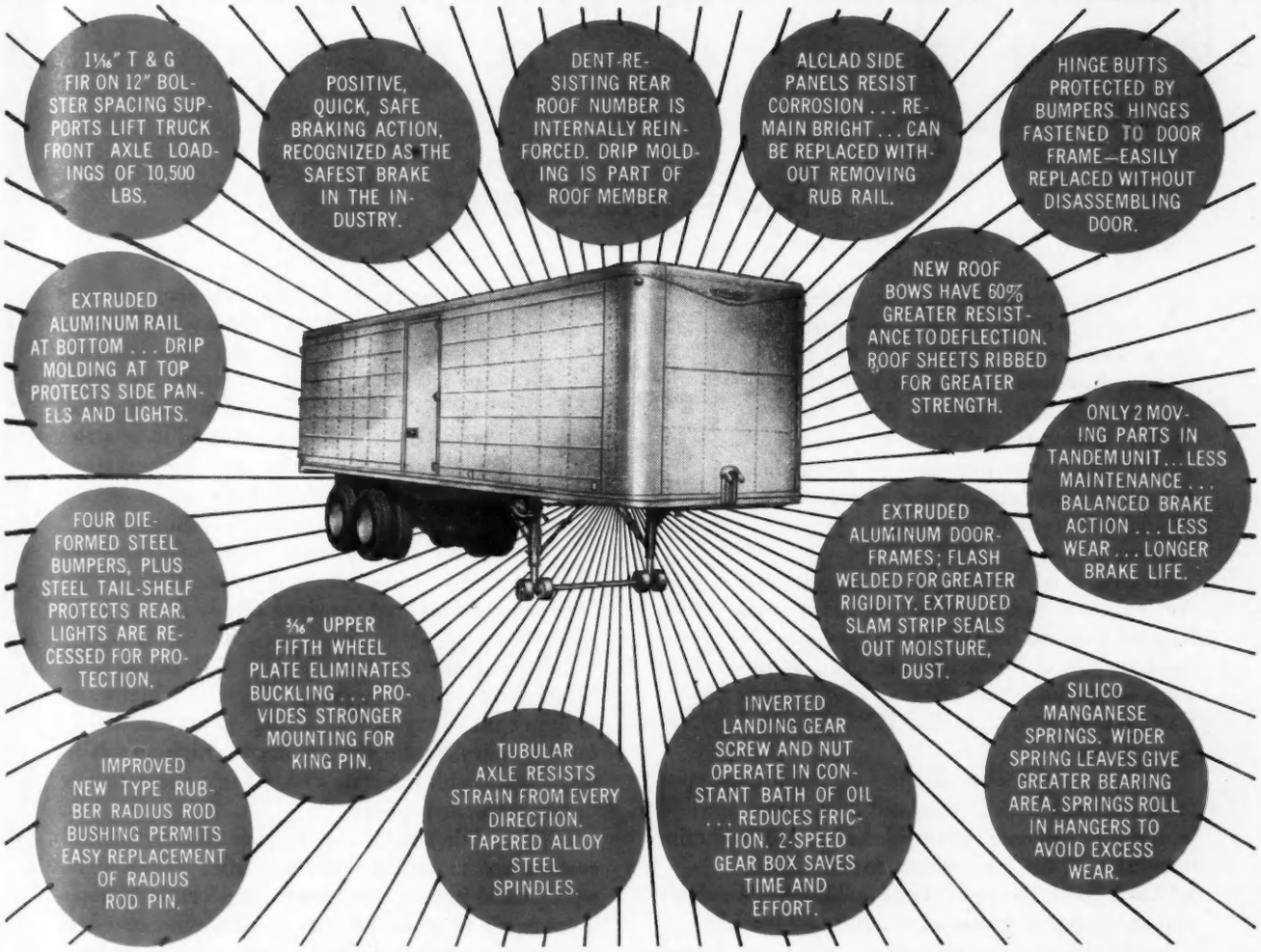
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IMPROVED NEW TYPE RUBBER RADIUS ROD BUSHING PERMITS EASY REPLACEMENT OF RADIUS ROD PIN.
TUBULAR AXLE RESISTS STRAIN FROM EVERY DIRECTION. TAPERED ALLOY STEEL SPINDLES.
INVERTED LANDING GEAR SCREW AND NUT OPERATE IN CONSTANT BATH OF OIL . . . REDUCES FRICTION. 2-SPEED GEAR BOX SAVES TIME AND EFFORT.

NEW, Stronger, Lightweight Model A is Advance-Designed to *Cut Rising Operating Costs!*

Trailmobile's new aluminum trailer meets today's need for a lightweight unit that can take it! Model A is advance-designed throughout with "years-ahead" features. All vital points of strain are reinforced to take grueling 24-hour-per-day service—yet require a bare minimum of maintenance.

Check the Model A specifications above, point by point, feature for feature. You'll find every construction feature which your own practical day-by-day experience proves is needed to meet today's hauling conditions. And only in this new Trailmobile will you find extra service so carefully engineered into the trailer—providing longer trailer life and greater safety. Get the cost-saving facts now!

WRITE TODAY FOR DETAILED INFORMATION

THE TREND IS TO TRAILMOBILE

CINCINNATI 9, OHIO • BERKELEY 2, CALIFORNIA

The OVERLOAD

EDITORIAL COMMENT

How Fast Is 20 MPH?

AS every reader knows, the subject of uniform codes has been very much in the news in recent months. DTA Administrator Knudson's forthright letter to the Governors (CCJ, April, P, 31), with its specific admonition against any reduction in weights was a big step in the right direction. Yet almost any reference to the AASHO code leaves eastern operators uneasy.

But right now we'd like to go to bat for another badly needed uniform code which happily contains hardly a controversial point. It's a code for the uniform interpretation of speed limit signs—especially the one, all too familiar in the East, which says "20 M.P.H." Sounds silly, of course. But is it?

Some time ago we took a bus trip. As we stopped for a traffic light in a congested New Jersey town, a motorcycle cop came alongside. Here is a verbatim transcript of his admonition to our driver:

"Look bud! The speed limit is 20 mph. We don't mind your going 40, but stay off the 50 mark!"

In a little Connecticut town on Long Island Sound the road winds around sharp curves and there are three pedestrians for every one vehicle. The sign says 20 mph and means it. There's a cop on duty to enforce it strictly. But how can the driver know this particular sign means 20 mph when a few miles back he has been rolling on a four-lane divided highway keeping his place in a steady flow of traffic at 50 mph, despite the fact that the same 20 mph sign was posted. Probably left over from an old highway the sign meant nothing and no one had the slightest idea of enforcing it. In one place the sign meant 20, in another 50 and for the bus, it meant 40.

Aside from the inconvenience of this crazy quilt game of "guess what," there's a very serious angle too. Modern high school driver-training courses are teaching the kids a high respect for highway laws. But the 20 mph sign in most states does just the opposite. As we wheel along the dual lane divided highway at 50, the kid says: "Hey, pop; the sign says 20!" If we went 20 right there, we'd cause the worst traffic jam in history. How can we convince the kids that the signs simply do not mean what they say?

In sharp contrast we recently had occasion to drive extensively over some Michigan highways. It didn't take long to notice that on a clear day in open country, traffic moved at very high speeds in accordance with the state's code for a speed that is "reasonable and proper."

BUT it didn't take long for our slightly cynical eastern eye to notice something else. When signs were posted in congested areas for 45 mph, 35 mph or even an occasional 20 mph, *all* traffic moved at the exact speed indicated. Something new and delightful had been added. Here was a whole series of signs that all meant what they said.

Is there not a moral here that could be rather easily resolved if the right pressure were put in the right places? Would it not be possible to make a thorough re-evaluation of all low-speed zones, revising many of them upward when circumstances permit? Then go to the public, as Pennsylvania has done with its top speed limit, and tell them that the signs mean exactly what they say!

Silly as it may at first sound, it seems to us the time is ripe for a nation-wide uniform definition of 20 mph.

Bart Rawson
Editor

EYE YOUR GAGES!

An engine is a pretty nice piece of equipment to have in any truck. Ever noticed how stalled you can be without one in front of your steering wheel? And have you noted how healthy engines run better than constipated drudges? You drivers can keep yours in the ranks of the regulars by giving her loyal attention instead of the royal goose.

Your truck has five senses—just like your old man. Those bright little gages on your instrument panel are placed there so she can complain—complain in time to save her soul and her bearings. She is critical of too much speed, too much heat, too little oil pressure, too much or too little charge, and she watches your gas tank closely. Yes, the speedometer, heat indicator, oil gage, ammeter and gasoline gage have stories to tell and they are damned important ones!

However, these five tales are often lost in the day's turmoil—competing with high flying skirts and low flying aircraft. If these gages had silk-covered legs instead of red hands, chances are you guys would take more stock of their positions. If they punched at times instead of waved, you would be more interested in heeding their frantic signals.

Every hour of every day some truck limps home with an oil pan as dry as a dypsomaniac in a distillery, with an engine hot enough to melt the hubs of Hades, with a noise that would stampede an air hammer—all because some driver failed to be guided by his instruments. Are you one of these nonchalant nincompoops? Or are you an alert Alex who is guided in to a safe three-point landing with an eye on the dial? Please, boys, please, don't scuffle off to Skokomo when your gages tell you No!

WHEN THE JOB IS *Tough*

PETERBILT C-O-E for Savage Transportation Co., San Francisco

ROSS BRINGS EASE . . . AND ECONOMY

OUTSTANDING ADVANTAGES of Peterbilt's C-O-E Tractor, pictured above, are increased load capacity, greater engine efficiency and performance, improved visibility, easier handling and riding . . . *and the finest in steering—ROSS.*

The Ross policy of incorporating advancements in design as they are proved by exhaustive tests has resulted in many recent improvements. Current Ross models have:

(1) ***Increased mechanical reduction*** . . . (2) ***More compactness*** . . . (3) ***Reduction in weight*** . . . (4) ***Greater arm angular-travel*** . . . (5) ***Improved metallurgy*** . . . (6) ***Increased efficiency.***

Throughout 44 years of leadership in this industry, Ross gears have been distinguished for long life, simplicity of adjustment and maintenance of long-recognized qualities of safety, stability and performance. We invite discussion of any steering problem.

Ross

Cam & Lever ***STEERING***

ROSS GEAR AND TOOL COMPANY • LAFAYETTE, INDIANA

CCJ REPORTS

WASHINGTON RUNAROUND

by GENE HARDY Washington Correspondent

CMP Goes Into Effect July 1

Supplies of steel, copper and aluminum for continued production of motor cargo vehicles, truck trailers and related items at a relatively high level seems assured with institution of CMP (Controlled Materials Plan) which goes into effect on July 1. However, NPA officials frankly expect no real benefits from it before August or September.

Briefly, the CMP is a program by which the three basic metals will be allotted to defense producers out of a set-aside, determined after considering requirements for the civilian economy and defense producers.

How much of basic material production will be put at disposal of defense producers is problematical at the moment. Some planners, for instance, would like to set aside 85 per cent of the steel, but the operating people at NPA do not think this is necessary. Administrator Fleischman says his job is to see that defense gets adequate supplies, but not so much that the civilian economy will be upset.

Actual percentages will be determined by weighing all requirements, then measuring non-defense against defense needs. Producers of almost all goods except consumer durables are required to file requirements. High on this list are manufacturers of motor transport vehicles, including truck trailers, and repair and replacement parts. In addition to filing requirements, a form is proposed for reporting monthly truck production.

OPS Ponders Contract Carriers' Price Plea

The Office of Price Stabilization is studying a request from its Contract Motor Carriers Industry Advisory Committee for relief from the general price freeze because of recent substantial increase in operating costs.

Industry cost-profit data is now under scrutiny to determine whether a special regulation is needed. The industry wants a new price regulation to eliminate hardship caused by the General Ceiling Price Regulation, which froze prices at the highest level they reached between Dec. 19, 1950, and Jan. 25, 1951.

The committee emphasized to OPS that some companies have contracts which have been carried forward for years without price increase, and that the general freeze fails to provide for increased prices that could be justified by sharply increased costs.

Johnson to Push Axle-Load Bill

A nation-wide 18,000-lb. axle-load limit would be imposed under legislation to be introduced by Sen. Johnson, Dem., Colo., Chairman of the Senate Interstate and Foreign Commerce Committee.

Last year, Sen. Johnson, sponsored similar legislation as a rider to the Federal-aid highway bill which would have prohibited Federal aid to States which did not enforce an 18,000-lb. limit. The rider was defeated on the Senate floor. However, the Senator believes he can muster substantial support for a separate measure.

Sen. Johnson is particularly critical of DTA Administrator Knudson's request to the States to relax size and weight requirements during the mobilization period.

Meanwhile, DTA has announced that its plan for certifying the movement of shipments of extraordinary size, shape, etc., essential to the civilian economy, will not overlap or supersede arrangements being made by the Defense Dept., for the handling of unusual shipments of miltiary goods.

ICC Won't Change PIE-Keeshin Decision

The ICC has struck its final blow at transcontinental trucking by re-affirming its decision of last November denying the Pacific Intermountain Express Co. the right to buy Keeshin Freight Lines, Inc.

The Commission stated that its action in barring the linking of these two lines was not based solely or even primarily on the adverse effect which the unification "might have on the present or future operation of the protesting railroads.

"We were equally concerned with the effect of such service on the financial stability of the protesting and other motor carriers competing in the Keeshin territory, and on their ability to continue providing the public wtih adequate transportation service."

Revised Safety Rules Ready

The ICC is getting set to issue its completely overhauled version of the Motor Carrier Safety Regulations. For several months the Motor Carrier Section of Safety has been revising the original draft on the basis of comments received from truckers, labor unions, etc. This job was just about completed at press time, and the Commissioners were expected to waste little time in issuing the new rules.

March Freight Car Supply Up 33,000

The Defense Transport Administration has high hope that its goal of 10,000 new freight cars a month can be reached during May. Since January, the NPA has been allocating enough steel to make this many but the car-maker's output at the end of March had only risen to a 7000-a-month rate, and first quarter production total amounted to about 19,000. This was about 2000 short of what DTA had actually expected. But the steel program for repair of freight cars has showed

(TURN TO PAGE 196, PLEASE)

Stabilization *instead of wall pressure...*

another important reason why:

RAMCO 10-up CURBS WEAR!

Ramco 10-Up Heavy-Duty Piston Rings are especially designed for Fleet Installations . . . Re-Ring or Re-Bore!

Pressure problems such as are involved in the contacting of steel with cast-iron, during the break-in period, are simply nonexistent with Ramco Spiro-Seal. Spiro-Seal solves the pressure problem by making possible the employment of the Ramco stabilization principle rather than the pressure principle to control oil and blow-by.

Here's why Ramco Spiro-Seal can and does function efficiently without the use of inner-ring pressure, during the break-in period. This stabilizing action is further fortified by the multiple bearing surfaces of steel and cast-iron which are employed in every Ramco 10-Up ring combination.

Ramco STABILIZATION Principles are one of many Ramco originations which CURB WEAR . . . by insuring adequate cylinder wall protection and elimination of "Rocking Chair Action."

Send for latest Catalog of Ramco Heavy-Duty Piston Rings

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CCJ REPORTS

DETROIT DISPATCH

by LEN WESTRATE Detroit News Editor

Tire Makers Press for More Rubber

The determined fight being put up by rubber industry, backed by truck and trailer manufacturers and user groups, may force release of some rubber from the government stockpile to ease the critical truck tire problem. Because of restrictions on use of rubber, production and shipments of truck tires have been falling off seriously, and the prospect for the situation to get worse before it gets better has the tire companies up in arms. They are insisting that the government release another 10,000 tons of rubber a month to prevent a breakdown in transportation this summer.

1.3 Million Truck Tire Shortage Feared

The industry predicts a shortage of 1.3 million truck tires this year unless action is taken to increase production. Industry officials say that there is enough rubber now in the stockpile to carry on a full scale war for 4 to 5 years. The thinking now is that truck tires will be very short until September, at least, because inventories have been depleted at a time when they are normally being built-up for the peak summer demand. There is some hope, however, that pressure from the industry, and perhaps from Congress, may force release of additional rubber, particularly if no further military crises occur within the next two months. The DO 97 Order, incidentally, no longer can be used to obtain replacement tires under the latest rubber order.

Alloy Steel Supply Hand to Mouth

It is almost impossible to get any accurate and definite information about truck manufacturing schedules for the next two or three months. Production has been holding at new record highs, but there are disquieting reports that critical shortage of alloy steels may knock the props from under the schedules late this month or in June. Materials for transmission and axle gears are extremely short. Suppliers of axles already are operating from hand to mouth on alloy steel. If this situation is as bad as reported, they may have to curtail or suspend operations, forcing truck builders down too.

New CMP May Include Trucks

Trucks are likely to be included in the new Controlled Materials Plan, but since that program does not start until July there may be a period of two or three months when truck production will suffer, unless extraordinary measures are taken by the government to make the needed materials available. Trucks and replacement parts industries are required to file estimates of their needs, and it is highly likely that both will be included when allocations of materials are made. However, even if CMP aid is obtained, there may be a period of shortage before the program takes effect July 1. DO order still can be used, but the supply is such that the priority may mean little more than a hunting license.

Higher Truck Prices Justified Says OPS

There may be another price increase on trucks before too long. It is reported that truck builders may get some relief from the general ceiling price regulation which now governs truck prices. OPS is said to recognize that some manufacturers' prices are out of line with costs, and that an upward adjustment is justified.

Light Truck Sales Drop

Truck sales continue brisk in the medium and heavier weight categories, but for the first time since the end of the war some selling pressure is required in ½, ¾ and 1-ton sizes. Even in larger sizes, while sales are very good, pressure is not as heavy as it has been in recent months. Field inventories are again on the rise, but are still below normal.

March Production Sets All-Time Record

It is not surprising that sales have slowed from the feverish pace of the last few months, in view of the record high production. March set a new all-time, first-quarter monthly record with more than 139,000 trucks —bringing the total for the first three months of this year to 375,000 units. If the first quarter rate were to prevail for the full year, industry would turn out 1.5 million trucks. Even though this total includes military units, it is estimated that that number will not exceed 100,000 this year. The commercial total still would be a new record.

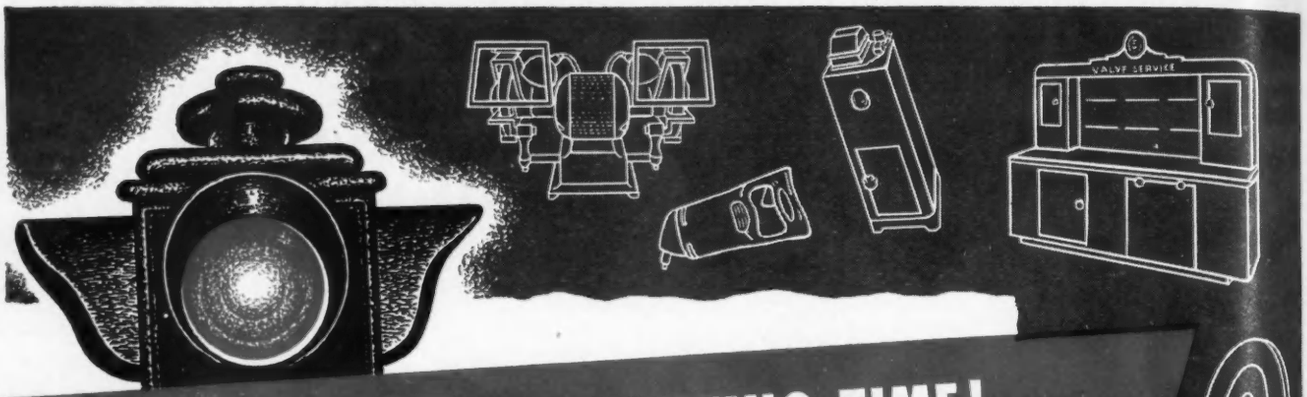
Missing Tires "Back-Ordered"

Truck manufacturers have escaped the price chaos that plagued passenger car producers when they were forced to leave off the spare tire. Price adjustments to customers were based on wholesale prices, requiring the buyer to pay the full retail price for the fifth tire. Some truck companies have shipped trucks without spares, and with only singles instead of duals, but have put the deficiency on a back-order basis to be shipped later.

Automatic Drive Future Brighter

The trend to more and more automatic drives in miltary vehicles may lead to their adoption in com-

(TURN TO PAGE 164, PLEASE)



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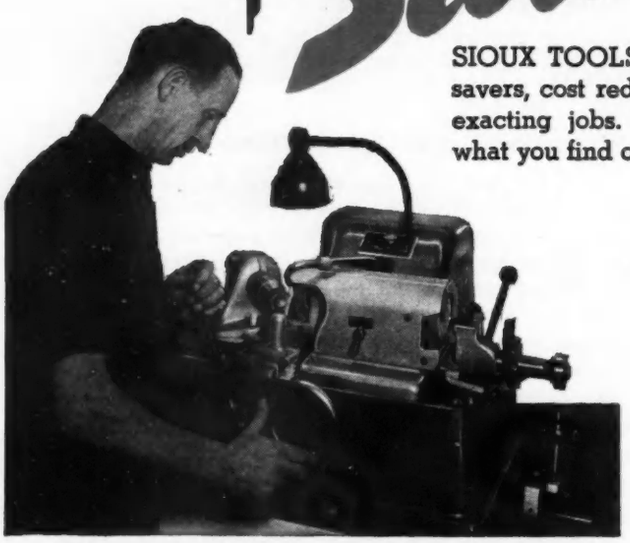
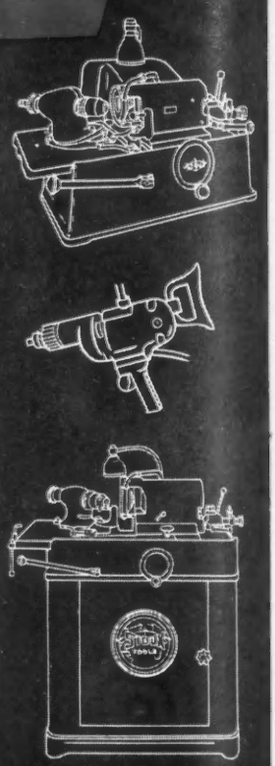
Get Performance— Long Life and Modern Design, by Equipping With *Sioux* TOOLS

SIOUX TOOLS are World famous as time savers, cost reducers and for delivering on exacting jobs. It's not what we think but what you find out that counts.



SIOUX VALVE FACE GRINDING MACHINE in use — producing finest finish and factory precision without heat or distortion.



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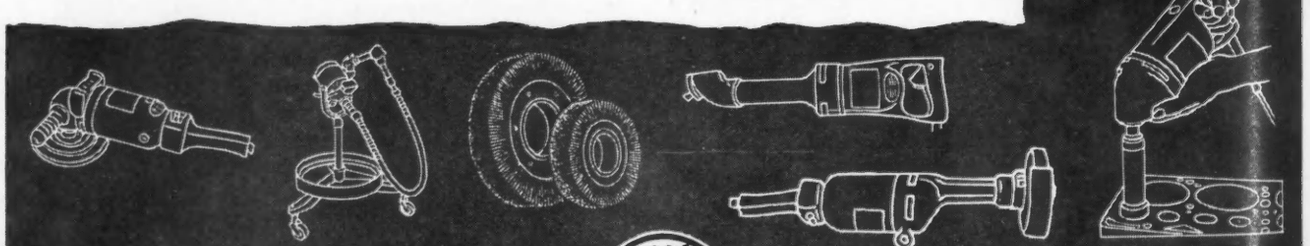


STANDARD THE WORLD OVER

ALBERTSON & CO., INC. SIOUX CITY, IOWA, U. S. A.

CCJ REPORTS

on News of the Industry

Don't Miss Fan Belt Data

An important new maintenance feature of the April issue of COMMERCIAL CAR JOURNAL was an analysis of the fan belt requirements for various truck models. The specifications were compiled from data sent in by the manufacturers supplying circumferences, widths, and angles of "V."

In compiling the index for the issue, located on Page 2 the Fan Belt Specifications were listed as Page 158. This should read Page 258.

Film Tells True Truck Story

Tearing the lid off the myth that America's truck drivers are a bunch of plug-ugly road-hogs, a new motion picture. "A Professional Portrait," is now being released for showing throughout the country. Released by the Automobile Manufacturers Association, the 22-minute film is designed to promote greater awareness of the responsibilities that go with operating a commercial motor vehicle.

The picture illustrates the practices of various segments of the American trucking industry in selecting and training men who drive commercial vehicles. It describes programs currently underway that are resulting in better safety records for large and small fleet operators.

The film had its premiere showing in Washington's Mayflower Hotel before a large body of government and business executives, highway user groups, the press and the trucking and automotive industries. It will be available for showing to companies within the trucking industry, to safety officials, state and municipal authorities, traffic officials, and educational groups.

The film was produced for AMA by Wilding Picture Productions, Inc. Distribution will be handled by the National Highway Users Conference, 952 National Press Building, Washington 4, D. C., and the American Trucking Associations, 1424 Sixteenth Street, N. W., Washington 6, D. C.

New York Conference Reorganizes

Election of temporary new officers and a temporary final details for reorganization were the highlights of a recent meeting of the New York Highway Users Conference. Fred H. Sexauer of Auburn, N. Y., a director of the Dairymen's League Cooperative Association, was elected as new temporary chairman succeeding Jerome B. Rusterholtz of Syracuse, N. Y.

Labor Pact Signed

Terminating a long period of antagonism between management, labor and the government, a contract was signed recently in Washington. Terms of the agreement provide for establishment of a New York City Trucking Authority as a cooperative labor-management court. At the head of this group will be an official appointed by the Secretary of Labor. The Secretary of Defense or his appointed assistant shall name arbitrators to settle wage problems.

Signing for industry were Joseph M. Adelizzi, managing director Motor Carriers Association of New York; Frank B. Kurtz, president, New York State Motor Truck Association; and Harris J. Klein, secretary, Interstate Motor Carriers Association. Representing labor were John E. Strong, Vincent L. Doyle, Thomas E. Hickey, and John J. Flatherty, all union officers.

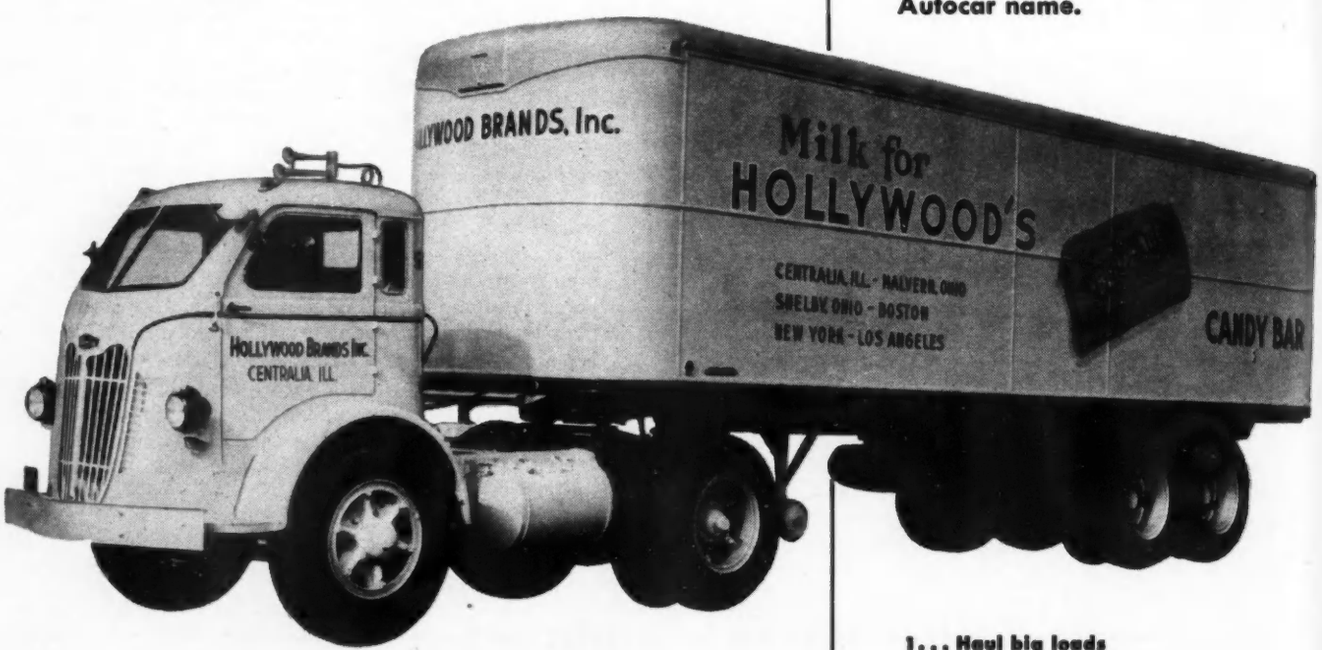
(TURN TO PAGE 128, PLEASE)

DATES and DOINGS

MAY 11-13—Georgia Motor Trucking Assn. Annual Convention, Hotel General Oglethorpe, Savannah, Ga.
MAY 14-18—Fleet Supervisor and Management Training Courses, Rutgers Univ., New Brunswick, N. J.
MAY 14-19—Fleet Supervisors' Course, Northeastern University, Boston, Mass.
MAY 14-19—American Trucking Association, Spring Meeting, Fairmont Hotel, San Francisco, Cal.
MAY 17-20—Southeast Automotive Show, Birmingham, Alabama.
MAY 21-24—American Transit Assn. Regional Meeting, Lord Baltimore Hotel, Baltimore, Md.
MAY 21-25—Fleet Supervisor and Management Training Courses, Washington Univ., St. Louis, Mo.
MAY 28-JUNE 1—Fleet Supervisor and Management Training Courses, S. Dakota State College, Brookings, S. Dak.
MAY 30-SEPT. 9—World Transportation Fair, Santa Anita Park, Calif.
JUNE 3-8—Society of Automotive Engineers Meeting, French Lick Springs Hotel, French Lick, Ind.
JUNE 4-8—Fleet Supervisor and Management Training Courses, State College of Wash., Pullman, Wash.
JUNE 7-10—Upper Midwest Regional Show, Minneapolis, Minn.
JUNE 14-15—Conference for Top Management of Motor Fleets, Pennsylvania State College, State College, Pa.
JUNE 19-22—American Trucking Assn., National Freight Claim Council, Fort Shelby Hotel, Detroit, Mich.
JUNE 22-23—Pennsylvania Motor Truck Assn. Annual Convention, Penn-Harris Hotel, Harrisburg, Pennsylvania.
JUNE 25-29—Fleet Supervisor and Management Training Courses, Northwestern Univ., Evanston, Ill.
JUNE 29-JULY 1—Maine Truck Owners Assn. Annual Convention, Mt. Kineo Hotel, Moosehead Lake, Kineo, Me.
JULY 20-21—Motor Transportation Association of South Carolina Annual Convention, Hotel Ocean Forest, Myrtle Beach, S. C.
AUG. 3-4—North Dakota Motor Carriers Assn., Inc., Convention, Patterson Hotel, Bismarck, N. D.
AUG. 5—North Dakota State Truck Roadeo, Mandan, N. D.
AUG. 13-15—Society of Automotive Engineers West Coast Meeting, Hotel Olympic, Seattle, Wash.

Short-wheelbase handiness . . . Autocar's specialty always

When you want someone to put all the essentials of a quality heavy-duty truck into a small space, it is good judgment to rely on Autocar. We have been building short-wheelbase models for 40 years. This Model U-90 Autocar Tractor illustrates how far experts in tractor design can go in stressing payload space—and still include all the power, speed, dependability and heavy-duty engineering for which Autocars are famous. It is a tractor-trailer combination owned by Hollywood Brands Inc., Centralia, Ill., candy manufacturer. It delivers good advertising with its good looks, as well as good performance—guaranteed by the Autocar name.



AUTOCAR TRUCKS

1 . . . Haul big loads
2 . . . Control the load
3 . . . Are strong all over
4 . . . Are dependable
5 . . . Are economical
6 . . . Make man-hours productive
7 . . . Keep pace with traffic
8 . . . Are virtually custom built
9 . . . Have extra power when needed
10 . . . Are long-lived

The Autocar Company, Ardmore, Pa. • Established 1897 • Factory Branches and Distributors from Coast to Coast

Diesel Motor Mechanic: "I want a divorce, Judge, because my wife always made me wash her back every Saturday night."

Domestic Relations Judge: "But you can't get a divorce for that!"

Diesel Motor Mechanic: "The heck I can't! Last Saturday night it was already clean."

CCJ

The travelling auditor for a large trucking company was making the rounds of his southern territory. While pasing through a small Tennessee village, he stopped to have a glass of beer in a saloon which had just opened. Noticing that a crew of workmen were moving the church across the street, he asked a man at the bar beside him why they were moving it.

"Wal, stranger," replied the native, "I'm the mayor of these hyar diggin's and I'm one hunnert puhcent fer law enforcement."

"What's that go to do with it?" inquired the auditor.

"We've has got an ordinance hyar what says no saloon shall be nearer than 300 feet from a church. I give 'em three days to move the church."

CCJ

"SIR," SAID THE HOUSEMAID, TO THE PRESIDENT OF FLEETY-FLEET EXPRESS, "EITHER YOU TAKE YOUR ARM FROM AROUND MY WAIST, OR KEEP IT STILL. I AM NO UKELELE."

CCJ

The long distance van driver noticed an Indian wandering aimlessly down the highway, so he pulled his rig to a halt on the shoulder of the road and good naturedly inquired, "What's the matter, Chief? Are you lost?"

"Me here!" replied the Indian, with dignity, hitting his chest with his fist. "Wigwam lost!"

CCJ

Fatty Floorboarder, the exalted panjandrum of our Gearshifter's Club, says that he may not win any medals for possessing the ideal masculine physique, but his girl sure has got a winning torso. "There's something about her figure that appeals to me," says Fatty, "But I can't seem to be able to put my finger on it."

The long distance van driver was dragging particularly heavy load of household furnishings through the hill country of Tennessee when he noticed the engine heat indicator on his dashboard acting up. At the next farmhouse, he noticed a brook running through the adjoining meadow, so he stopped at the house to borrow a bucket to use in filling up his radiator. As he approached the front door he spied the the woman of the house sweeping everything out into the yard, so he said: "Good morning, madam. I see you had a fish fry here last night."

"Nope, I reckon as how we ain't had no fish fry," was the reply. "Them there ain't fish scales I'm asweepin' out. Them's toenails. We'uns had a big square dance hyar las' nite."

CCJ

The automotive part clerk by day, doubled as a Red Cross swimming instructor by night. Quizzing a group of girls in his class one evening he asked: "Which article of clothing would you remove last if forced into the water fully clothed?"

The class broke up when one bright girl answerd: "The blouse, because air gets under it and acts like a buoy."

CCJ

Handy Andy, our trailer switchman, is quite an amateur photographer. The other day he said he was taking a snapshot of his girl in a high wind an got an excellent clothes-up of her.

CCJ

STENO SUE: "I HEAR YOUR BOY FRIEND GRADUATES FROM LAW SCHOOL NEXT MONTH. I GUESS YOU'LL GET MARRIED THEN?"

STENO LOU: "OH, NO, NOT RIGHT AWAY. I WANT HIM TO PRACTICE ABOUT A YEAR FIRST."

CCJ

Safety Director's Wife: "I sent my husband to the hospital because of his knee!"

Traffic Manager's Wife: "Did he have water on it?"

Safety Director's Wife: "No, his private secretary."

CCJ

AUTO PARTS CLERK: "HOW ABOUT A SPIN IN THE COUNTRY?"

SWEET PATOOTIE: "NOT TONITE, HONEY, I'M TOO TIRED. LET'S JUST RUN OUT OF GAS RIGHT HERE IN THE PARLOR."

LITTLE WILLIE LIT A ROCKET,
WHICH HIS DAD HAD IN HIS POCKET
NEXT DAY HE TOLD COUSIN DAN
"DADDY IS A TRAVELING MAN."

CCJ

Road Truck Driver: "Your eyes fascinate me, babe—they're so wonderful. I can see dew in them."

Sweet Patootie: "Take it easy, Romeo, and quit your double clutchin'. That isn't do—that's don't."

CCJ

"HEY," CRIED SATAN TO THE NEWLY ARRIVED O. S. & D. CLERK, "YOU ACT AS IF YOU OWN THIS DUMP."

"I DO. MY WIFE AND MY BOSS GAVE IT TO ME."

CCJ

A heavy duty truck mechanic, who was an inveterate tippler, went into a bar and ordered a Martini. When served, he drank the Martini, chewed the bowl of the glass up and threw the stem over his shoulder. He continued this for about six Martinis and noticed that the bartender was staring at him.

"I guess you think I'm crazy, don't you?" interposed the truck mechanic.

"I sure do," the bartender replied, "the stems are the best part.'

CCJ

RICH SPARKPLUG MANUFACTURER: (AFTER DINNER IN A PRIVATE DINING ROOM) "WELL NOW, MY DEAR, HOW ABOUT A LITTLE DEMITASSE?"

CUTE CHORINE: "I KNEW YOU WEREN'T TREATING ME LIKE THIS FOR NOTHING."

CCJ

With all these poems about the rabbit
And all about the rabbit's habit
What would we do for rabbit stew
If rabbits didn't have habits?

CCJ

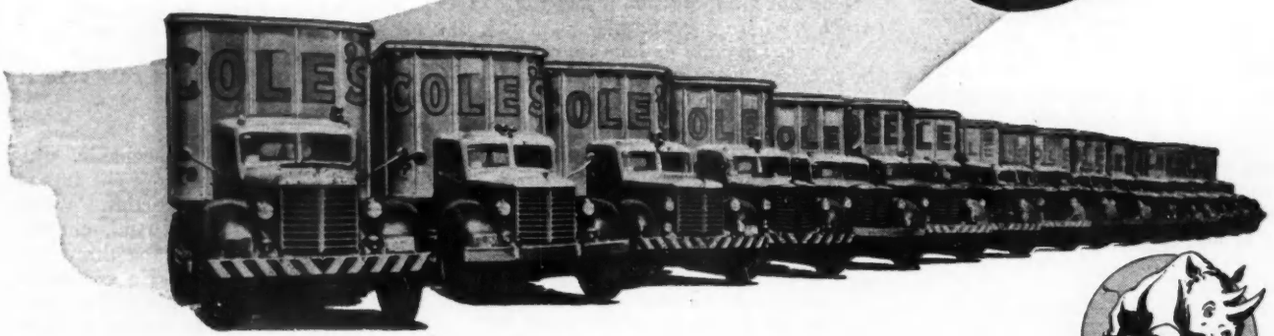
The Traffic Rate Clerk and his girl friend were sitting in a hammock in the moonlight. For half an hour not a word had broken the stillness of the night. Finally she asked, "If you had money, what would you do?"

The Rate Clerk replied: "I would travel." He felt her warm hand slip into his—and then she was gone. In his hand was a dime.

Resume Work

"MY MILEAGE COST RECORDS PROVE THERE'S NO FINER DEAL THAN... ARMSTRONG!"

A. J. COLE
Cole's Express,
Bangor, Maine



● "I've been running a big fleet for years. So I guess I know what it's all about.

"I've always had to watch costs closely. I'm proud to tell you that every dollar I spend on tires pays off—because today I buy nothing but Armstrongs.

"My mileage cost records prove that dollar for dollar, mile for mile, Armstrongs are the best tire value on the market today.

"I tried them all, compared them all. Then I took to Armstrongs and wouldn't think of buying another brand.

"If you're like me, and want one hundred cents value for every dollar you spend—buy Armstrongs." *Armstrong Rubber Co. Plants: West Haven 16, Conn., Natchez, Miss., Des Moines, Iowa. Export Division: 20 East 50th Street, New York 22, New York.*

ARMSTRONG
TRUCK TIRES

Since 1912, millions of tires for cars, trucks and tractors have proved Armstrong's leadership in value.

Rapes of Wrath

Chamber's transportation specialist summarizes arguments of both sides of truck-highway feud, and pinpoints association views on AASHO Code

By Henry K. Evans
Highway Transportation Specialist
Chamber of Commerce of the United States, Washington, D. C.

NOT SO LONG AGO, "The Rape of Our Roads," an article in *Readers' Digest*, hit hard on the theme that over-the-road trucks are ruining our roads. This was immediately followed up by "The Rape of the Truth," by Professor John S. Worley in *Power Wagon*, completely discrediting the *Digest* article.

Both of these rape articles exhibited considerable wrath, and are pretty good examples of the current attitudes on the two sides of a hot controversy—one that's due to become even hotter. One side says—stop the upward trend of truck sizes and weights and save our fast-deteriorating highways. The other side says—don't hamstring the trucking industry . . . build the highways to suit the trucks.

The majority of viewpoints on both sides recognizes the uniform standards on sizes and weights recommended by the American Association of State Highway Officials. However, the first group, primarily government officials, would make these a ceiling to be exceeded by no state; and the latter group, primarily highway transport interests, would make these a floor, below which no state should go.

Ceiling vs Floor

IT IS interesting to note the viewpoints expressed on this point by various national industry groups and government agencies. Some prefer all states to adopt the same limits, while others like either the ceiling or the floor idea. These are summarized as follows:

AMERICAN ASSOCIATION OF STATE HIGHWAY OFFICIALS—Originator of AASHO standards, which are recommended as a uniform code to be adopted by all states.

AMERICAN AUTOMOBILE ASSOCIATION—Supports AASHO standards, except as to length, feeling that 50-ft maximum is enough.

AMERICAN PETROLEUM INDUSTRIES COMMITTEE—Favors AASHO standards as a *floor*.

AMERICAN TRUCKING ASSOCIATIONS, INC.—Recommends, as a *floor*, a set of standards slightly higher in some respects than the AASHO code.

ASSOCIATION OF AMERICAN RAILROADS—Feels that regulations are too liberal in most of the states and cities highway damage as result. AAR favors retaining regulations as a state function (not federal) and considers that limits are a regional problem, there being no reason to favor a national ceiling on weights.

AUTOMOBILE MANUFACTURERS ASSOCIATION—Favors AASHO standards as a *floor* and recommends that more restrictive rules be brought into line. Would not reduce more liberal regulations, citing lack of factual data and understanding.

CHAMBER OF COMMERCE OF THE UNITED STATES—Opposes any state or local regulations not essential to safeguarding of life or property which interfere with or burden interstate transport.

COUNCIL OF STATE GOVERNMENTS—Favors no increase in sizes and weights regulations pending completion of state-federal studies of road surface strength, but favors reduction of those above the AASHO code down to code level as a *ceiling*.

NATIONAL ASSOCIATION OF MOTOR BUS OPERATORS—Recommends AASHO standards as a *floor*. Prefers increasing maximum width for buses.

NATIONAL COUNCIL OF PRIVATE MOTOR TRUCK OWNERS, INC.—Advocates AASHO standards as a *floor* below which no state should go.

NATIONAL COMMITTEE ON UNIFORM TRAFFIC LAWS AND ORDINANCES—Uniform Vehicle Code, Act V, concurs with AASHO standards, except for permitting wider buses in urban areas and requiring shorter vehicles (50-ft maximum).

NATIONAL HIGHWAY USERS CONFERENCE—Says the proper sizes and weight limits best for public interest have not been determined yet; recommends studies to accomplish this, and recognizes benefits of liberalizing many existing state regulations in meantime.

TRUCK-TRAILER MANUFACTURERS ASSOCIATION—Favors AASHO standards as a *floor*. Cites need for more research.

U. S. BUREAU OF PUBLIC ROADS—Supports AASHO maximums with the 18,000-lb axle limit frozen for the future.

Pros and Cons

MANY are the arguments put forth on both sides of the question of increasing sizes and weights regulations. Those who would call a halt to the upward march put forth the following principal arguments:

A ceiling is necessary on states' size and weight maximums—

1. To establish one of the fundamental prerequisites of sensible highway and bridge design. Engineers need to know expected maximum loads to design properly for the future. If no maximum standard is to be set, is it conceivable and economical for the highway engineer to design and

(TURN TO PAGE 154, PLEASE)

Flexible Maintenance Program

Louisville property sets up mileage goals for all bus companies and adjusts them

IT'S PRETTY HARD to become an expert marksman unless one practices on a specific target. That's why we always keep something before us to shoot at in our maintenance program.

For example, we have set up an arbitrary mileage life goal for each engine and each accessory unit. This mileage figure, based on our own experience and past performance, is our target. The ultimate objective, if we stay on the target, is longer equipment life and lower maintenance cost.

What makes this program interesting is that our target is not stationary; it is very much "alive"—always on the move, and mostly upward.

The life expectancy mileage figures are carefully reviewed each year, at which time they are subject to revision. Some figures may be raised, if the unit is outrunning its expectation, others may be reduced, if it is apparent they cannot reach their goal. The latter condition usually indicates room for improvement; that we need to look for opportunities to change our method of reconditioning, amend our routine, or should re-examine part quality.

Longer Life, Lower Cost Gained

AS A WHOLE, this flexible program has been responsible for improvements both in the cost picture and in service from equipment in use. Carried out to the ultimate, this means better service with fewer de-

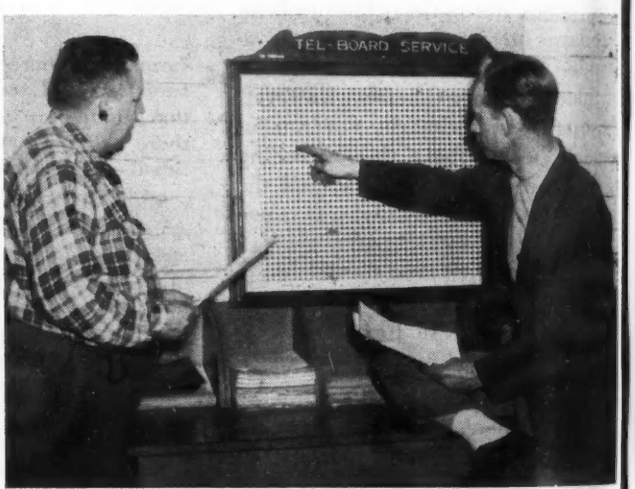


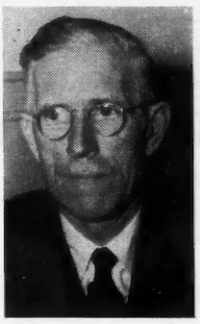
FIG. 2. These control boards indicate when a bus is due for an overhaul. Shop foremen then schedule work needed

FIG. 1. Record book is reviewed yearly by Superintendent Smith, who may change life expectancy table if necessary

FIG. 3. Twin-post lifts are preferred in main shop. Bus may be tilted by raising or lowering post at either end

Boosts Bus Life

yearly—mostly upward—to get maximum life



By Torrens A. Smith
Superintendent of Equipment
Louisville Railway Co., Louisville, Ky.

lays and annoyances for our patrons. This has been achieved, we think, mainly because we have had a constant, active target on which to practice.

A few examples will illustrate what I mean. A few years ago, we considered that the life of an engine was about 75,000 miles. With the constant improvement in engineering, metallurgy, and development of new and better components, engines should be giving constantly better performance. In our shop, we expect engines to operate efficiently for 125,000 to 150,000 miles between major overhauls. Generally speaking, we think we can overhaul and re-overhaul indefinitely.

Life expectancy of overhauled air compressors is pegged, this year, at 48,000 miles. Most of them reach the mark; some reach 50,000 miles be-

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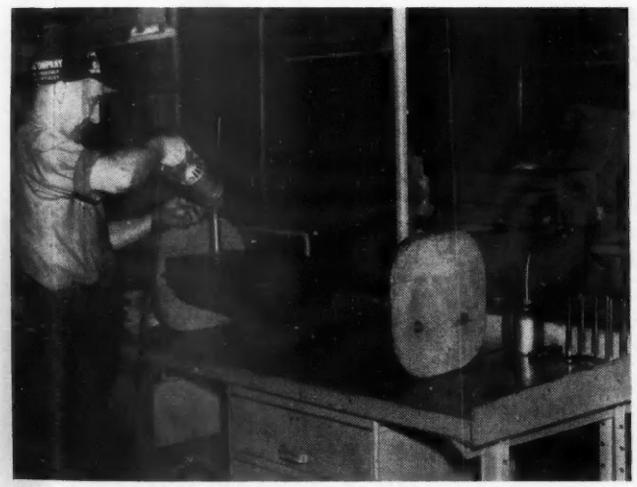


FIG. 4. Wooden ends, shop designed, are bolted to head assemblies enabling mechanic to turn assembly on bench

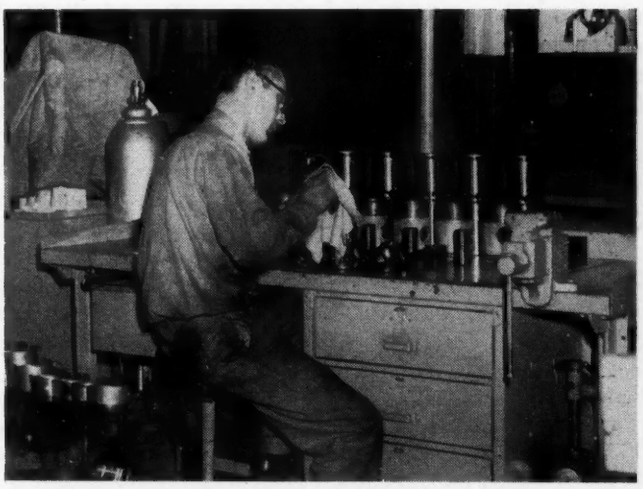


FIG. 5. Specialists handle rebuilding engine and parts which are covered when finished and stored until needed

FIG. 6. A gain of 25,000 miles between overhauls of the torque converters has been realized by this department

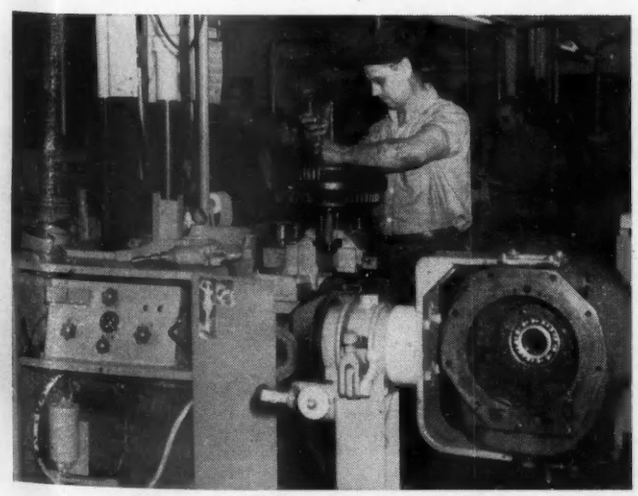
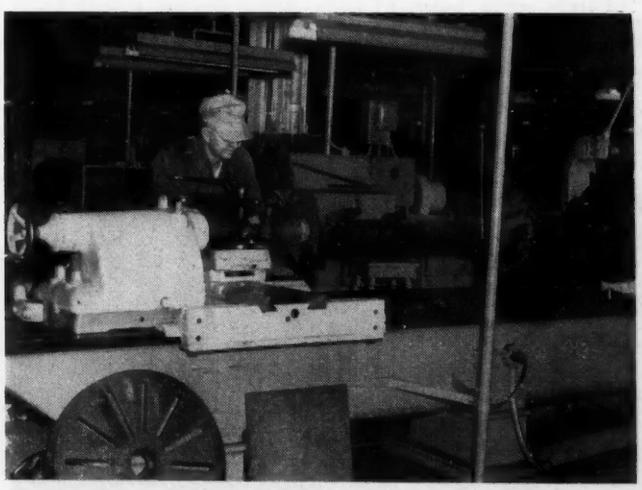


FIG. 7. Worn axle bearing surfaces are metalized and turned to a new size on one of the machine shop lathes



Flexible Maintenance Program . . .

Continued from Page 53

fore being removed from service. It should be remembered that all units are expected to be removed from service *before* they start generating road calls. If this good compressor record continues, I will raise the ante next year when I review the figures.

Quite the opposite is taking place with our air governor mileage which has been set up at 12,000 miles. We have not been able to reach this figure. One thing giving us trouble here is that our governor valves are gumming up with a hard varnish on both the gasoline- and diesel-powered vehicles. Apparently this situation is not unique with us. We are told the trouble is widespread. Sooner or later, of course, this condition will be conquered, and the life expectancy of the unit can be increased.

Blower overhaul was set at 48,000 miles. It performance was so good that we raised the target to 60,000 but then we had to lower it. The same for water pumps; they kept close to their expectancy of 48,000 miles, were raised to 60,000, only to be reduced to 48,000.

Clutches have been making a steady increase in their mileage life. Life expectancy of clutches on our equipment now is set at 75,000, having been raised to that figure from 50,000. Axles are rated at 150,000 miles.

Mileage expectations, daily mileage, oil and fuel consumption are kept on large sheets in our unit book. Mileage on each engine and all units are kept on the page with the bus on which they are installed, so that actual mileage and performance along with the life expectancy is always before us.

Road Calls Drop Proportionally

IN THE measure in which the goals are being achieved, road calls are going down. Currently, they are running from four to 10 daily on 469 pieces of equipment. These calls include a number of items not strictly chargeable to the maintenance shop; such as flat tires, dirty bus due to illness of a patron. Consequently, the number of service calls due to failure of mechanical equipment is exceedingly small.

The fleet of the Louisville Railway Co. totals 469 units, composed of 202 GMC diesels, 107 Mack gasolines, 75 of the 798 Whites, 25 Fords, and 60 Brill trolley coaches.

While we are charged with the maintenance of the trolley coaches, they are being discontinued and eventually will be replaced with diesels. Our Fords, a carry-over from the war period, are considered light for their job. Now used on short feeder lines, they are gradually being replaced with larger units.

Three service garages are maintained in various parts of the city to serve their particular sections. Engine and unit accessory overhaul is handled only at the main shop.

The main shop works a single day shift. The service garages, by the nature of their business, are operated both day and night. One of the service garages is located in a building

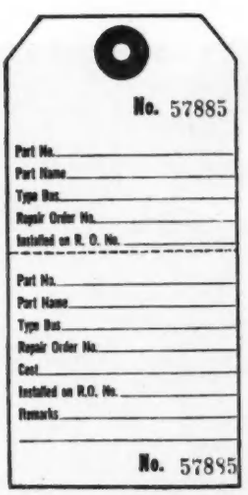


FIG. 8. Upper half of this tag is wired to engine, the lower goes to accounting department

FIG. 9. Constant air pressure is kept in this dust-free room by filtered fan on the top and vents on the bottom

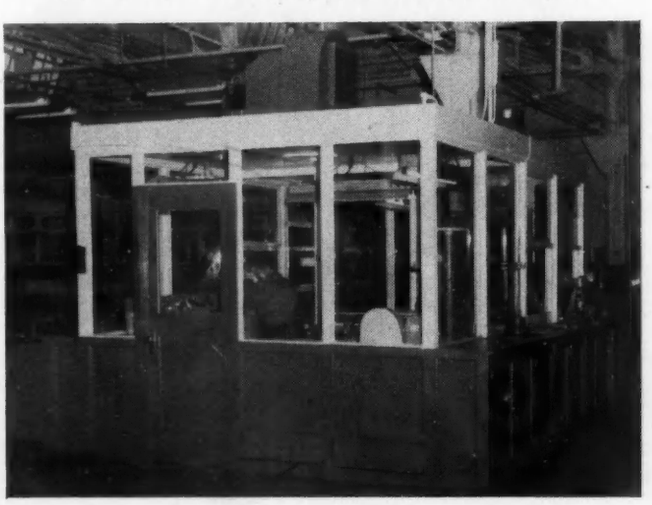
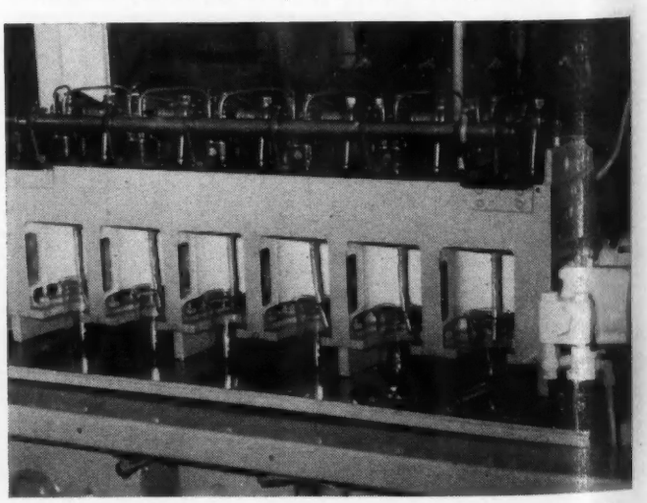


FIG. 10. Exact amount of fuel being pumped through each nozzle is the basis of test on this shop-built machine



adjacent to the main shop. All service garages are under my jurisdiction.

Control Board in Each Garage

WE USE a central control board at each service garage so that jobs may be scheduled for the main shop as often as necessary, and that no unit be overlooked.

When a bus engine reaches the 125,000-mile period, the division in which it is located will be notified by the record department of the main shop. A red marker then will go up against this bus on the control board. Then the service garage foreman and main shop foreman together study the past record of the engine to see whether it needs to have the major overhaul.

If, for instance, it had been recently given a minor overhaul including rings, it might be allowed to run a few months more; but the red indicator would still stand against the bus on the control board until it was ordered into the shop. This, obviously, prevents it being returned to service, where it would next attract our attention by a road call.

If these two supervisors decide that the engine is ready for overhaul, the service garage foreman writes an order for the job and the bus is sent to the main shop. There, the engine, including transmission and clutch, is removed and a newly rebuilt engine is installed. Then the bus is returned to its garage. Incidentally, no jobs of any kind can start without a written order signed by the designated authority.

When the engine is removed from the bus, we take this opportunity to clean the engine compartment thoroughly. Hose connections are examined for wear and leaks, and replaced as needed. The radiator is examined and its history checked. Unless it has been recently cleaned, it will be removed and replaced with a freshly-cleaned radiator which will go out with the new engine.

Special Crew Installs Engines

WE HAVE a special crew which removes and installs engines. Doing this job many times has given this crew much experience in locating things that might cause future trouble; such as minor defects in air or water connections, electrical connections, and so on. A minor item can cause an expensive road call.

(TURN TO PAGE 104, PLEASE)

UNIT RECORD

Unit No. _____

Unit Name _____

Date Repaired	R. O. Number	Cost	Date Installed	Bus Number	Date Removed	Service Mileage

FIG. 11. This form keeps track of mileage on each unit in repair. Data help evaluate costs. Form is 5½x8½ in.

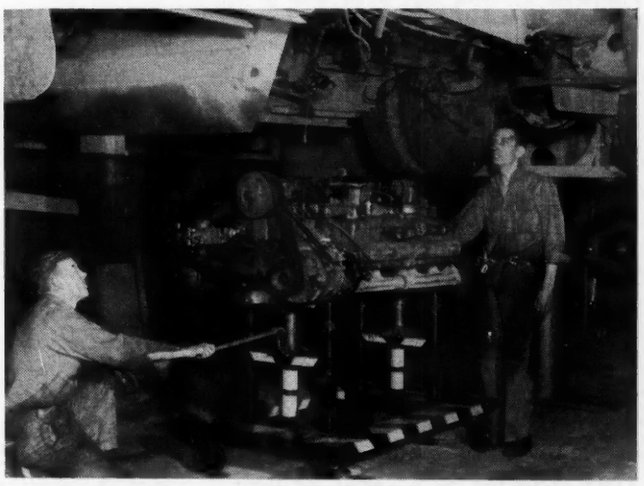


FIG. 12. Special crews remove and install engines. Here a shop-built lift raises a horizontal engine into place

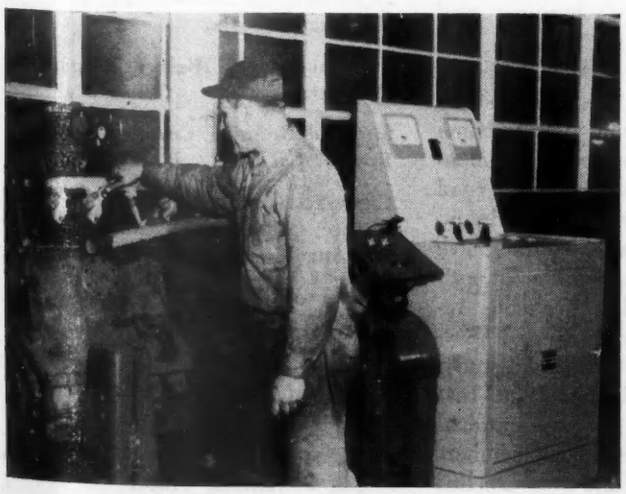


FIG. 13. Engine set up for dynamometer tests. Fuel hookup is a shop-built device adaptable for gasoline or diesel

FIG. 14. Destination signs are spray painted by placing block letters on roll which show in relief when removed

200 FLEETS Recognized for MAINTENANCE EFFICIENCY

Facsimile of card issued to members of CCJ's Board of Experts. This hand-picked group are the industry's key men

40 per cent of CCJ's Board of Experts receive awards for merit and excellence based on a series of maintenance studies that established standards for industry

By A. W. Greene
Managing Editor, Commercial Car Journal

THE COMMERCIAL CAR JOURNAL pauses to pay tribute to the nation's best-maintained fleets — through its representatives, the CCJ Board of Experts.

For the past five years, COMMERCIAL CAR JOURNAL readers have been given the benefit of the top quality practices and long maintenance experience of this outstanding group of fleetmen. Data compiled as a result of their surveys have appeared almost continuously in COMMERCIAL CAR JOURNAL in a special editorial insert known as the Fleet Operators' Experience Handbook. These data provide the transportation industry with long-needed standards of practice.

Of special importance was the recently completed series of studies on the life expectancy of the principal parts and components of a commercial vehicle. This was a major undertaking. Within the relatively short time of a year and a half, life expectancy data on 138 different parts were developed. Never before has this type of information been compiled and presented anywhere in this manner.

If the study had been tackled on any other basis, such as one replacement part survey per month, it would have taken 11½ years to do the job. This long period would have invalidated the study as a single presentation, because of changes in parts construction and design, labor conditions, maintenance techniques, and so on, over the years.

Unless conditions change radically within the next few years, this study can be used for a long time to come as the basis for preventive maintenance programs, for catching road failures and lowering fleet maintenance costs. The data, of course, have other uses—such as a guide for unit rebuilding schedules, vehicle replacement, and so on.

It was the result of this great study, conducted mostly during 1950, that inspired the desire to give national recognition to those Board members who were abreast of and even excelled the standards they established for the industry.

The honor roll of this distinguished group of fleets, and the awards they have earned, follows:

Certificate of Excellence

Dixie Drive-It-Yourself Co., Inc.
Birmingham, Ala.

Yavapai County Highway Department
Prescott, Ariz.

Sunland Refining Corp.
Fresno, Cal.

City of Los Angeles
Refuse Collection Division
Los Angeles, Cal.

County of Los Angeles
Shops & Garage
Los Angeles, Cal.

County of Contra Costa Garage
Martinez, Cal.

U. S. Forest Service Equip. Division,
Jahoe National Forest
Nevada City, Cal.

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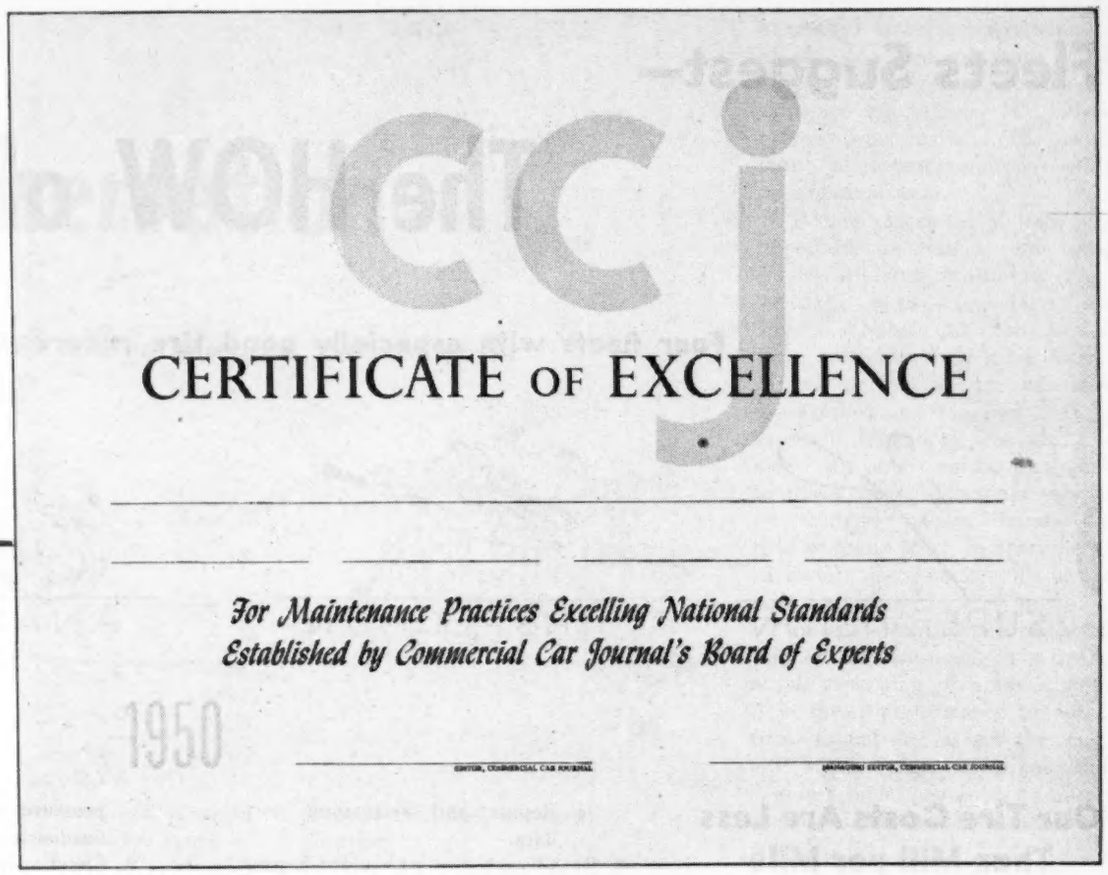
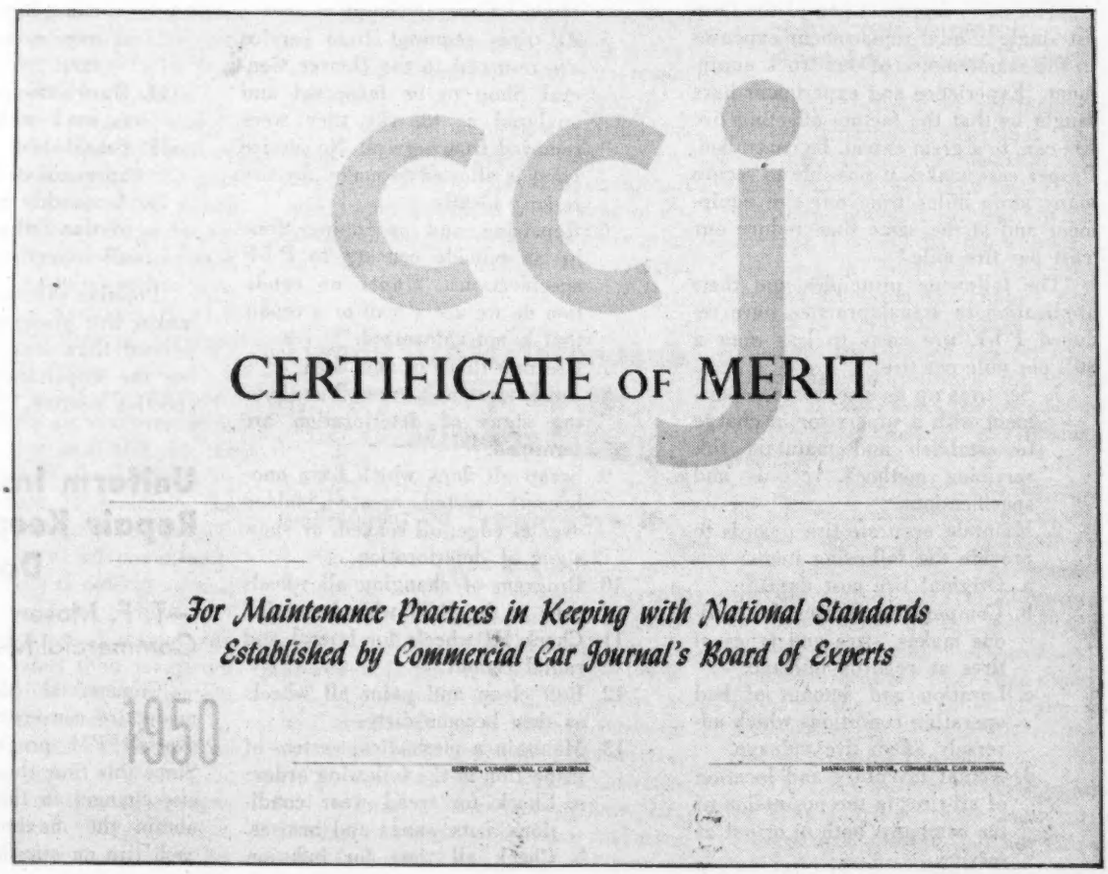

CERTIFICATE OF EXCELLENCE
For Maintenance Practices Excelling National Standards
Established by Commercial Car Journal's Board of Experts
1950

The certificate shown above was issued to fleets whose maintenance practices excel national standards and the standards for their particular vocations. The methods employed by this group result in top fleet efficiency

The certificate shown below was issued to fleets whose maintenance practices were in keeping with the high national and vocational standards established by surveys published in the Fleet Operators' Experience Handbook


CERTIFICATE OF MERIT
For Maintenance Practices in Keeping with National Standards
Established by Commercial Car Journal's Board of Experts
1950

Fleets Suggest—

The HOW of Tire

Four fleets with especially good tire records provide their

Our Tire Costs Are Less Than Mill per Mile Per Tire

—Parkman Sayward Pacific Intermountain Express

"Tire costs represent one of the largest single annual replacement expenses in the maintenance of our truck equipment. Experience and experiment have taught us that the factors affecting tire life can, to a great extent, be controlled. Proper care makes it possible to secure many more miles from our tire equipment and at the same time reduce our 'cost per tire mile.'

"The following principles and their application to actual practice have reduced P-I-E tire costs to less than a mill per mile per tire:

1. Set tires up as a separate department with a supervisor in charge to establish and maintain tire servicing methods, records and specifications.
2. Maintain accurate tire records to provide the following items:
   a. Original tire cost data.
   b. Comparative figures for various makes, sizes and types of tires as regards mileage.
   c. Location and amount of bad operating conditions which adversely affect tire mileage.
   d. Actual inventory and location of all tires in the possession of the company, both in or out of service.
   e. Repair and retreading cost data.
3. Brand each tire with a P-I-E prefixed serial number to diminish possibility of error in the keeping of records and as a safeguard against loss or theft.
4. New tires installed only at the Denver General Shop.
5. All tires removed from service are returned to the Denver General Shop to be inspected and analyzed as to why they were removed from service. No service point is allowed to make any tire repairs locally.
6. Repairing and recapping done by an outside concern to P-I-E specifications. Under no condition do we use a boot or a repair that is not vulcanized.
7. Use new tubes in new tires.
8. Tubes stretched, creased or showing signs of deterioration are scrapped.
9. Scrap all flaps which have once become twisted, creased, folded over at edge, oil soaked, or show signs of deterioration.
10. Program of changing all wheels over to the R-5° wide base rim.
11. Check all wheels for lateral and radial runout.
12. Buff clean and paint all wheels as they become dirty.
13. Maintain a methodical system of inspection in the following order:
    a. Check for tread wear conditions, cuts, snags and bruises.
    b. Check all tires for inflation pressure, valve for leaks and condition of valve tips.
    c. Check dual mating. Tires mated as duals will be within 1/8 inch of the same overall diameter with smaller tire to the inside.
    d. Make a close inspection of rims, lugs and nuts and take any corrective action necessary.
14. Have sufficient and modern tools to work with.
15. Established driver check stops approximately every 50 miles.
16. A monthly analysis of all causes of tire failures is distributed to all supervisors concerned.

"Possible shortage of new equipment makes tire preservation even more important than ever and P-I-E is stressing the importance of its regular inspection routine."

Uniform Inspection and Repair Keep Our Costs Down

—T. F. Moser Commercial Motor Freight, Inc.

"Commercial Motor Freight, Inc., made tire conservation a part of their over-all PM program early in 1942. Since this time there have been numerous changes in this program so as to obtain the maximum efficiency from each tire on our fleet.

Conservation

formulae for upping mileages, cutting costs

"For background purposes, it might be well to briefly outline the scope of the company's operation. Commercial operates nineteen major terminals located in Ohio, Indiana and West Virginia, with ten garages strategically located throughout its system and with general maintenance shops located in the center of their operations at Columbus, Ohio. Their present fleet is comprised of more than 1000 vehicles serving 561 communities direct, daily.

"To set forth the program now in effect, a central tire inspection and repair department is located in the general maintenance shops, where a uniform inspection can be made under the supervision of a qualified supervisor. All new tires are branded with a company number, and a complete record is maintained from the time of purchase until the tire is scrapped.

"The major terminals are equipped with either portable air compressor or air lines which are available at the docks for airing and checking trailer tires daily in order to maintain the recommended air pressures. A regular 3500-mile inspection of all power units is made for mechanical defects as well as tire inspection. This includes air pressures, injured tires, alignment and tires that have reached their maximum mileage for recapping. Strict attention is paid to the application of tires on both power and trailer equipment for matching. A large stock of spare tires is carried at each of the ten garages throughout the system. This allows a flexible inventory so that tires can be properly matched at the time of application.

"Over a period of the past eight years, a constant program has been in effect to train our maintenance employees in inspection for injured tires and those that have reached the maximum point for recapping. The general procedure is to first apply new tires on the power units, as recapped tires are used extensively on semi-trailer units.

"To sum up our program: a uniform inspection and repair of tires, regular inspection of tires on rolling equipment and proper matching at the time of application account for a higher tire mileage for Commercial Motor Freight, Inc."

Timely Tire Maintenance Pays Off in Better Mileages

—Ray Kupp
Consolidated Freightways, Inc.

"Controlled tire maintenance performed at 2500 to 4500-mile intervals on line haul vehicles and bi-monthly checks on local vehicles results in improved mileages and better safety record. Equipment routed to arrive at base service shops at mileage intervals are subjected to a complete tire service.

"A complete tire service involves (1) ordinary replacement of flats, (2) removal of cut tires for repair and tires worn to point of recapping, (3) mating of dualed tires to carry equal share of the load and matching of sets of duals to minimize tire slippage or hardships on differentials, (4) inflation to proper pressures and (5) report of faulty alignment conditions evidenced by abnormal wear.

"Proper placement of tires plays an important function in this program. New tires placed on front truck or tractor axles as a safety factor are removed at about one-half skid-design wear and shifted to drive axles. Recapped perfect casings are used on drive axles, and repaired tires, or recaps with repairs, on free rolling trailer axles. In other words, place tires in positions where maximum service can be attained without failure—weaker tires in easier jobs. In operations loaded to full tire capacity, this is particularly important.

"Since the carcass represents 70 per cent of the investment in a tire, when a full recapping program is followed, it is smart performance to not abuse tires, to not try to get the very last mile before recap, but to keep the carcass in a sound condition for additional one to three times less expensive recap miles."

Improvement in Quality Is Factor in Good Mileage

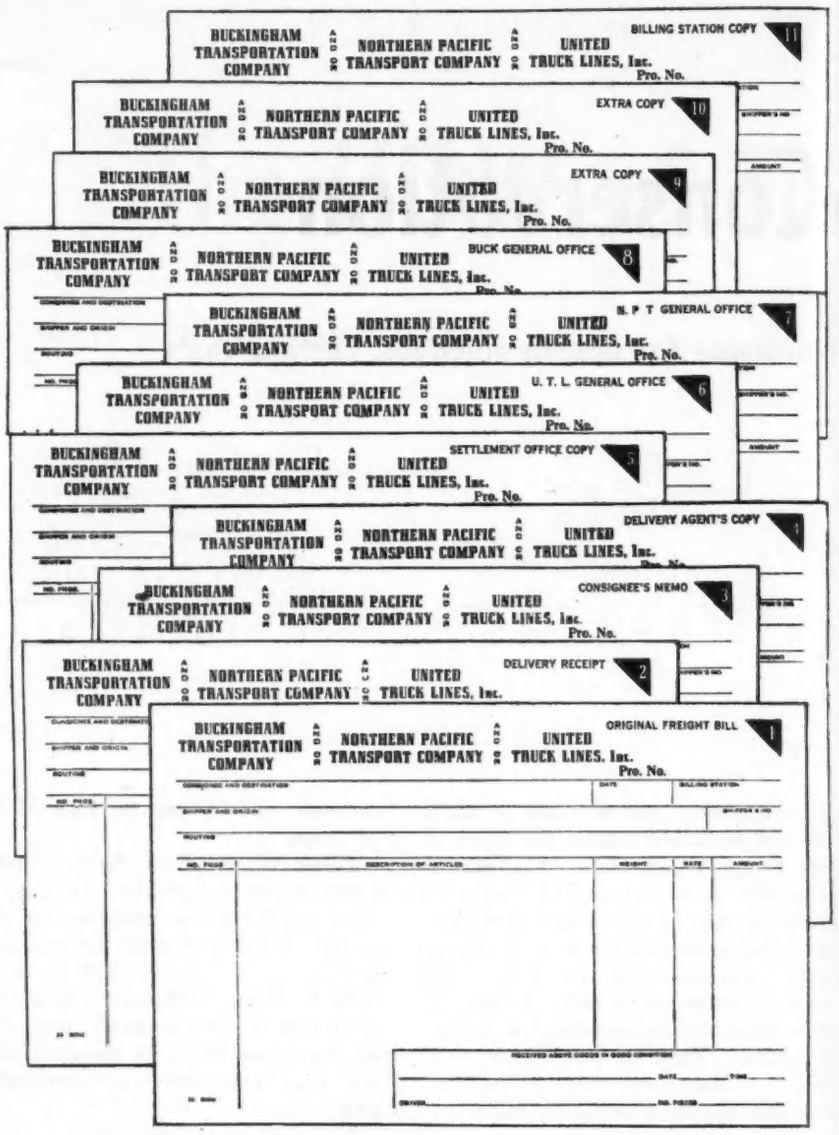
—by Fred Grumme
Aero Mayflower Transit Co.

"Facts disclosed by our maintenance record department show that the average life of all tires removed by us in 1950 was 3.7 per cent less than that for those removed in 1949. While the average life of the unrecapped tires removed in 1950 was 8½ per cent greater than the unrecapped tires removed in 1949, the average life of the recapped tires fell off 4½ per cent and more than compensated for the gains of the unrecapped tires because fewer of the latter were in use during the year.

"Since there have been no changes in our maintenance or operating procedure which should affect tire life, I attribute the better performance of the unrecapped tires to improvements in their quality by the manufacturers. An increased number of carcasses that had been recapped more than once, was probably the chief cause of the small decrease in the average life of the recapped tires for last year.

"This past year is the first in which we have failed to make gains in our average tire mileage, but our tire cost per mile is satisfactory."

ABOVE. H. D. Westbrooke, center, traveling freight agent for Northern Pacific, check shipment. Right, John Young, manager of recently formed Bureau. Seated, Frank Remus, clerk



RIGHT. Bureau uses 11-copy, fan-fold, multiple bill prepared either from the shipper's bill of lading or other carrier's waybill copy. This eliminates separate billings and possible errors

By F. R. Meehan

General Superintendent
Northern Pacific Transport Co.
Billings, Mont.

THREE MAJOR LINES in the northwest have developed a through trailer service with through trailers originating at Omaha; destination Portland, Spokane, and Seattle, and the reverse of this route.

If there is a straight load, these through trailers can originate at any spot in the middlewest for any point in Montana, Oregon, or Washington, with a fourth connecting line (Garrett at Butte, Mont.) to handle shipments for Utah, Nevada, and California.

Carriers Coordinate

United Truck, Northern Pacific and Buckingham give

In order to expedite the movement of trailers, tracing of shipments, and to give a speedy settlement or division of revenue between carriers, a Motor Freight Traffic Bureau has been set up at Billings, Mont. The cost of maintaining this bureau is divided between carriers as per unit in the joint operation.

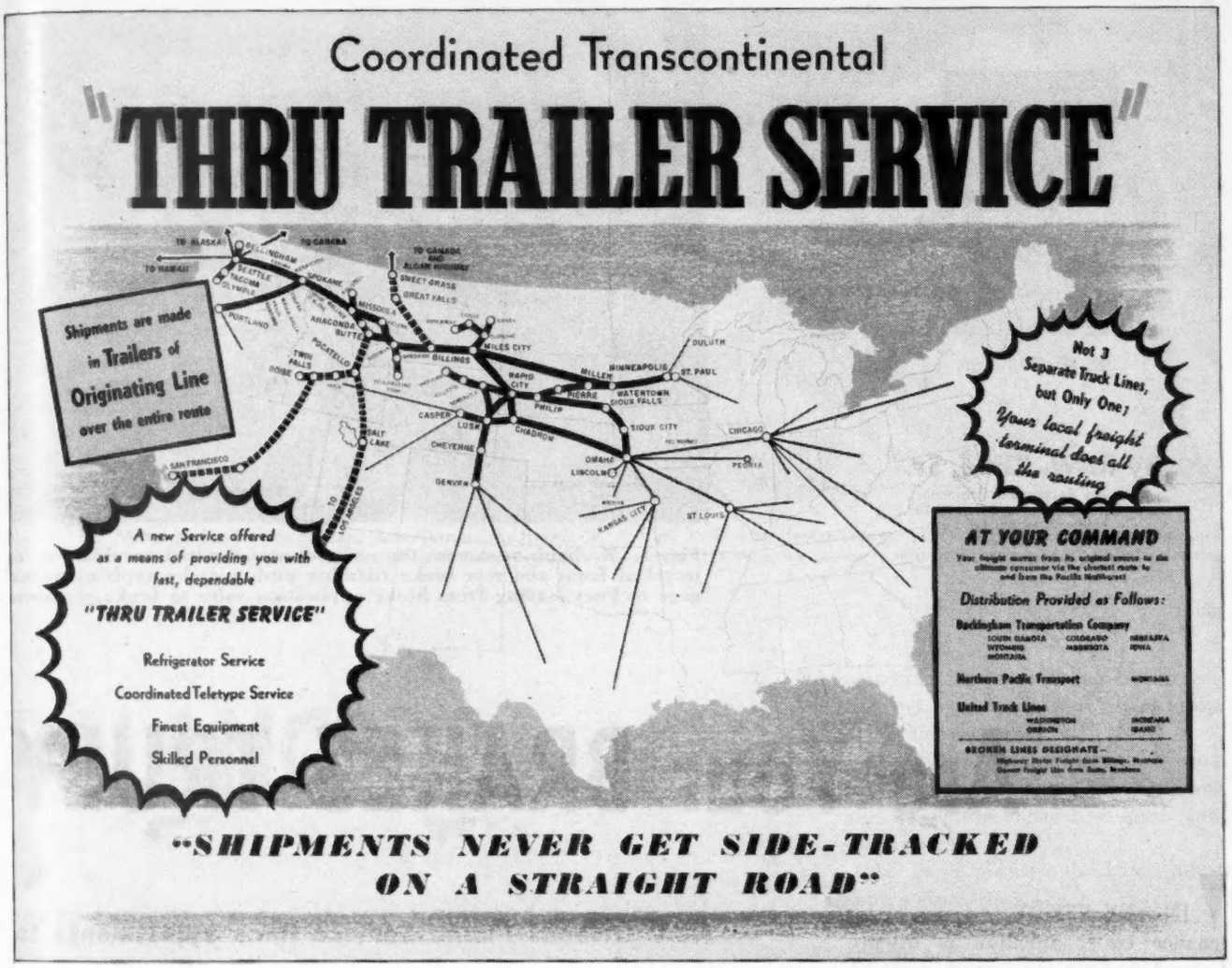
In working out this through service a few standardizing adjustments were required, such as hose and light connections.

The new features of this joint through service are:

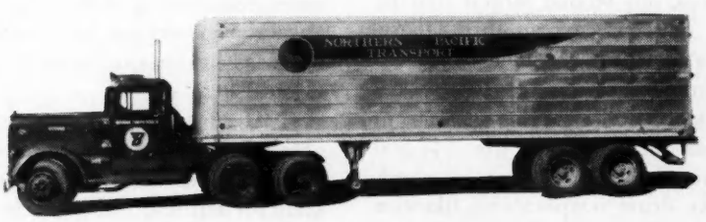
1. The coordination of schedules between the three carriers has been accomplished through the newly formed bureau.

2. Joint through waybills are used which enable the units to move through junction points with no rebilling delay.

3. Centralized tracing on through shipments is handled by the teletype operator at the Bureau. There are two teletype machines equipped with


Coordinated Transcontinental
"THRU TRAILER SERVICE"
Shipments are made in Trailers of Originating Line over the entire route
Not 3 Separate Truck Lines, but Only One; Your local freight terminal does all the routing
A new Service offered as a means of providing you with fast, dependable
"THRU TRAILER SERVICE"
Refrigerator Service
Coordinated Teletype Service
Finest Equipment
Skilled Personnel
AT YOUR COMMAND
Distribution Provided as Follows:
Buckingham Transportation Company
Northern Pacific Transport
United Truck Lines
"SHIPMENTS NEVER GET SIDE-TRACKED ON A STRAIGHT ROAD"

Above is reproduction of advertising broadside used to announce service. Below, at right, is a Buckingham tractor pulling Northern Pacific trailer



Services

for Long Shipments

through service from northwest in original trailer

reperforator attachments. Incoming messages are reproduced in tape form; the forms then being fed into the second machine for points beyond.

(Example: Seattle teletypes a message to the bureau for relay to Omaha. The bureau operator receives the tape message, which he then feeds into the second machine and it is reproduced in Omaha.)

4. The division of revenue is handled by the Bureau on a daily basis by voucher to each carrier. The joint through waybill, which carries the names of the three lines in the heading, enables the carrier to eliminate the necessity of showing carrier divisions on waybill at the time shipment is shipped out. This is done by the Bureau upon receipt of the auditing copy on each bill. At the end of each day, all bills are listed by the manager of the Bureau on a statement sheet which is totaled to reflect the moneys collected by and due each carrier.

(Example: Buckingham has col-

(TURN TO PAGE 114, PLEASE)

R. W. Ziifle, Sr.

By R. W. Ziifle, Sr.
Railway Betterment Engineer
New Orleans Public Service, Inc.,
New Orleans, La.

Fig. 1. Mechanic measures the air pressure required to obtain 1 in. travel of front and rear brake chamber push rods by applying an air gage to lines leading from brake application valve to brake chambers

Are Your BRAKES TRULY

New Orleans Public Service finds adjustments to

IN ANY STUDY to lower maintenance costs, attention is usually focused first on the largest items of expense, as it is here that the largest potential savings are indicated.

Brakes, our second largest maintenance material expenditure, therefore, came in for considerable study.

An analysis of our records showed a marked difference between front and rear brake lining life (47,500 miles versus 16,870 miles). A check of brake drum temperatures likewise showed a very high temperature differential (185 deg F) between front and rear brake drums. These two facts indicated there was room for improvement in our braking system.

We believed that if we could lower the temperature differential between front and rear brake drums by a better distribution of braking, our average overall brake lining and drum life would be increased proportionately and our brake maintenance cost lowered.

A perusal of available literature on the subject of brakes and brake balancing further pointed to proper brake balancing as the answer to lower brake costs. It also indicated agreement among brake experts that, given the correct size brake chambers, balanced brakes can be obtained only if and when—

1. The pressures at each wheel to obtain 1-in. travel of the brake chamber push rods are approximately the same for left and right wheels as well as front and rear wheels.

2. Drum temperatures per wheel for front and rear wheels are balanced within reasonable limits (50 deg-75 deg F.).

3. In addition, we also believe, though many may disagree, that both front and rear brakes should be applied against the drums at the same time. (Our experience indicates better braking with less application pressures and much less tendency to skid when brakes are applied to all four wheels simultaneously.)

Accordingly, we set out to balance the brakes on our buses. First, the braking system on one of our buses was completely overhauled and brought as closely as possible to the specifications set forth by both vehicle and brake manufacturer. New brake diaphragms were installed in both front and rear brake chambers. Brakes were adjusted according to manufacturer's specifications.

Certainly, with everything returned to original specifications our brakes should be balanced—so we thought!

Check Reveals Discrepancy

JUST to make sure, however, the wheels were removed and air gages were placed in the air lines leading from the brake application valve to front and rear brake chambers. The air pressure required to obtain 1-in. travel of front and rear brake chamber push rods were measured, as shown in Fig. 1.

To our astonishment, the front brake chambers required 9 psi as compared with only 4 psi for rear chambers, *a differential of 5 psi.* Several rechecks of our figures con-

Fig. 2. Ed Shogan, junior engineer, determines the push-out pressure required to operate the front brake diaphragm

Fig. 3. Brake drum temperature is measured at the end of each test run by using a contact pyrometer on all drums

BALANCED?

specifications do not insure balanced brakes

vinced us that our readings were correct.

Just how could there be such a differential in air pressures required to operate front and rear brakes which had just been balanced?

Back to the literature we went scurrying to see if we had misunderstood the prerequisites for balanced brakes. Astonishment gave way to amazement when we read that *over 77 per cent of all brake applications in city operation require 20 psi or less of brake chamber air pressure, 37 per cent of all brake applications require 10 psi or less, and 11 per cent 5 psi or less.*

Amazement turned to bewilderment when we read further that, "while a 4- or 5-psi differential in the air pressure needed to expand the shoes is relatively unimportant when the total brake chamber pressure is 60 psi, *it becomes tremendously important when the average application pressure is 10 to 15 psi.*

"For example, on a 15-psi application, should one wheel require 10 psi while the others require only 5 psi shoe expansion force, this wheel will be using only 5 psi pressure for actual braking purposes. Obviously, it will be delivering only 50 per cent of its designed retarding force.

Should the reverse of this be true —that is, the brake on one wheel require 5 psi pressure and the brakes on the other wheels require 10 psi— it is immediately apparent that the brake on this one wheel would be vastly overworked. This, of course, will result in increased drum temperatures, increased wear, poor brake performance and very short lining life."

Here then it seemed were the reasons for at least some of our brake troubles. Here was indication that *our front brakes,* which required 9 psi to move the shoes out against the drums, *were doing little or no braking for 37 per cent of all our brake applications.* Here, also, was an explanation for the 185 deg F differential between front and rear brake drum temperatures.

But still to be found was the reason for the 5-psi differential between front and rear brake chamber push out pressures.

Air gages placed in brake chamber supply lines soon showed that *3 psi of the differential was due to a quick release valve in the front brake line* between the brake application valve and brake chambers. When this valve was removed from the system, and the front brakes were allowed to exhaust through the exhaust port of the application valve, the push-out pressure differential between front and rear brake chambers was immediately reduced from 5 psi to 2 psi.

In an effort to find this remaining 2-psi differential, further checks were made of brake shoe return springs and all linkage. When these were all found within the limits of manufacturer's specifications, it was decided that a process of elimination was the only way to find the elusive 2 psi.

Brake shoe return springs were removed from front brakes, brake slack adjusters were disconnected from brake chamber push rods, and brake chamber return springs were removed from the brake chambers. The pressure differential between front and rear brakes still remained at 2 psi. This left the brake chamber dia-

(TURN TO PAGE 118, PLEASE)

$25 FOR THE BEST HINT PUBLISHED EACH MONTH • • •

Shop hints from

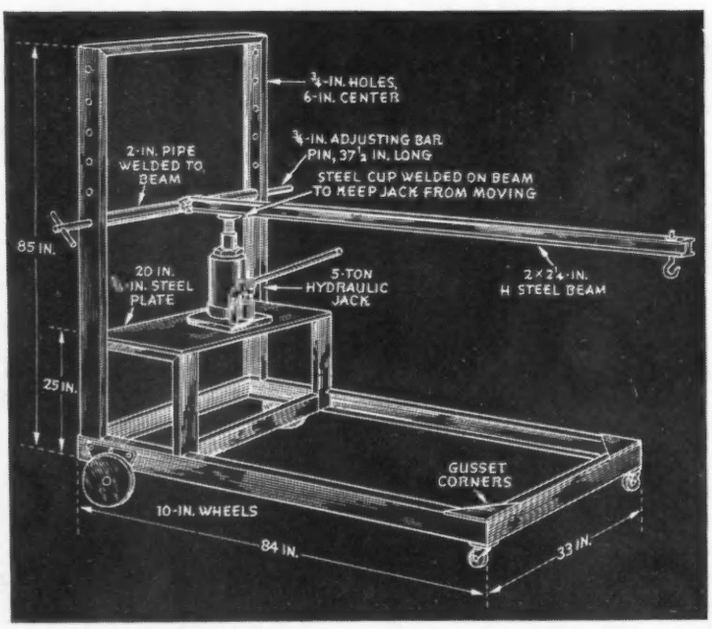
$25 Hint of the Month ★

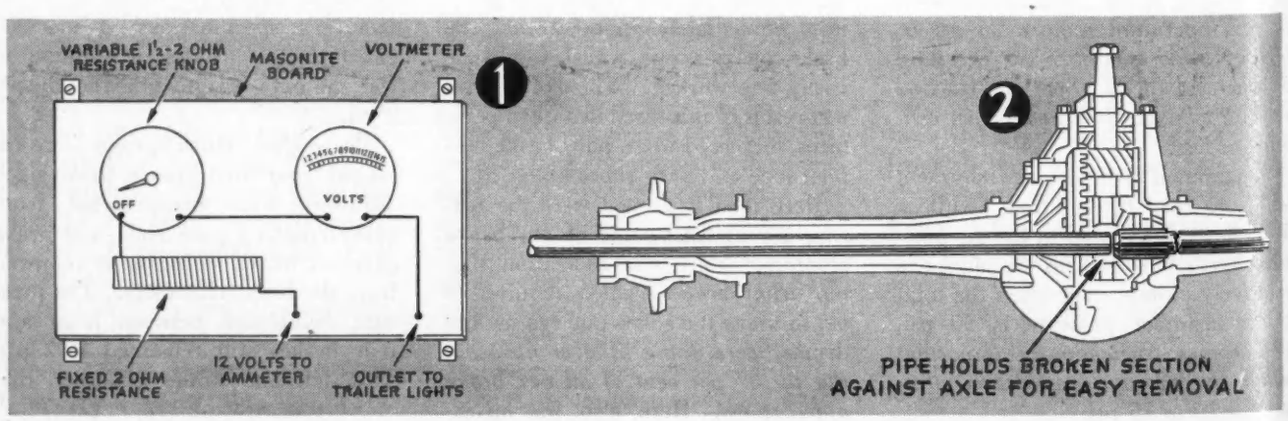
COE Engine Crane

by J. H. Greif
Haas, Baruch & Co., Los Angeles

Here is a drawing of a COE engine removal dolly used in our shop to save time and effort. In fact we have found that one man can remove or replace an engine in any one of our 65 COE jobs in about half the time it takes with our 15-ton traveling chain hoist.

This dolly is made from 5 x 1¾-in. channel iron fashioned into a rectangular base with uprights as shown. A regular 5-ton hydraulic jack is set on the pedestal and fitted into a cup on the 2 x 2½-in. I beam. One end of this boom is fitted with an eye bolt for a chain hoist, and the other is welded to a 2-in. pipe crosspiece which is fitted between the upright pieces. This is adjustable to various heights to accommodate different sizes of trucks. Ten-in. wheels and 6-in. casters make the unit readily portable.





$5 FOR ALL HINTS PUBLISHED EACH MONTH

FLEET SHOPS

1. Light Voltage Control

by A. L. Lord
Direct-Winters Transport
Toronto, Ontario

We recently took delivery of some GMC units equipped with diesel engines and 12-volt electrical units but wanted to use 6-volt lights on our trailers. We tried splitting the battery for six volts but ran into difficulty. We were unable to secure an adapter so we made up a voltage control resistance unit.

This unit is built on a bakelite panel, hooked up with a line from the ammeter at 12 volts. The circuit consists of the following units: a voltmeter reading from 0 to 15 volts, a fixed resistance of 2 ohms, a variable resistance of 1½ to 2 ohms. These are arranged in series as shown in the diagram.

The panel is fixed behind the driver's seat so that when he hooks onto a trailer, he can adjust the intensity of his trailer lights through the variable resistance unit, thus maintaining between 6 and 7 volts as shown on the voltmeter. As the trailers vary in the number of lights, the variable resistance can be adjusted to maintain the same voltage.

2. Axle Removal

by Adam Ertel
Lion Brewery, Inc.
Wilkes-Barre, Pa.

When an axle shaft breaks, it usually separates at the splined end and is hard to remove without disassembly of the housing. Here is the way we remove it.

Just slip a long section of pipe into the opposite side and push while a man on the other side exerts pressure upon the break with the broken section of axle. In this way you can remove a broken axle on the road without much trouble.

3. Brake Chamber Drain

by Paul Magee
Pyramid Motor Freight Corp.
Philadelphia, Pa.

Here is an idea we worked out after experiencing trouble with the air brake chambers freezing up in winter. We simply drill two holes into the housing just above the diaphragm so that water which collects here due to condensation can drain out before freezing.

4. Con Rod Separator

by Teddy Roy Stansbury
Modesto, Cal.

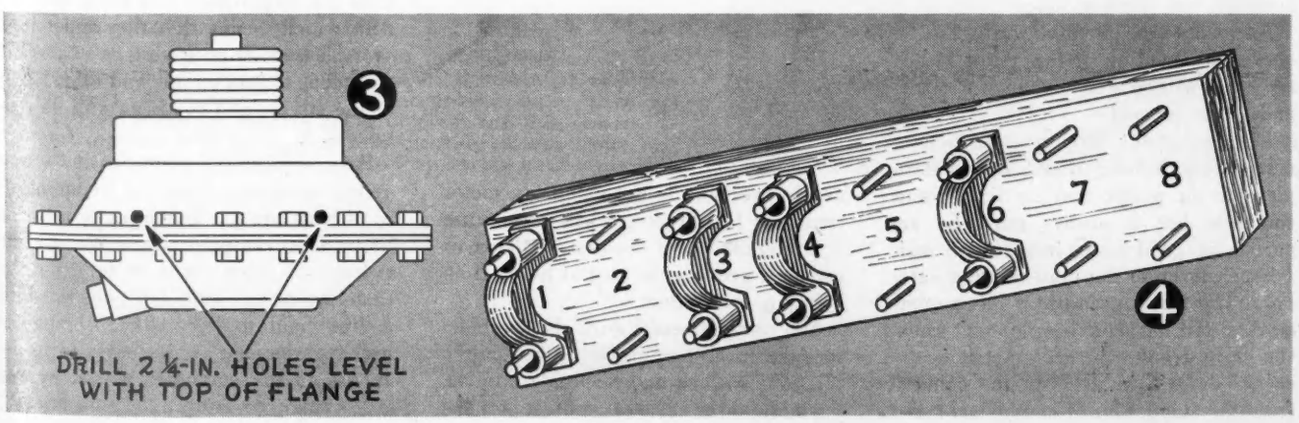
I made this connecting rod separator out of a 2 x 4 piece of wood, to hang rod caps on during overhaul of the engine. Pegs are driven into the piece at intervals, and each location is numbered so that you can hang the caps to correspond to their positions in the engine. In this way they never become mixed up.

5. Body Guard

by Thomas J. Cute, Operating Mgr.
Fidelity-20th Century Trans. Co.
Phila., Pa.

Here is an idea that I found to be a great help in truck and trailer body maintenance.

We found due to the overall height of our bodies, the roof along the top corners were being bent in from tree limbs, etc., on narrow streets and driveways. I had our body man install a 5/16 x 1-in. angle iron the full length of bodies, tapering down the ends so that branches of trees now ride over it to eliminate this expensive and unsightly condition. In our case, the roofs are metal so angles were easily tack welded on.



GOOD PUBLIC RELATIONS—

It's Your Duty

Four Points to Consider

1. Conduct operations so as to win respect of the public
2. Place accurate facts and information before the public
3. Be progressive, cooperative, courteous in use of roads
4. Use maximum care in selecting and training of personnel

By Parkman Sayward
Director of Public Relations
Pacific Intermountain Express

PROBABLY no class of industry is more concerned or dependent upon favorable public relations than the motor carrier industry. Whether or not this fact is appreciated by the industry as a whole may be a matter of question. What constitutes favorable opinion and what develops good public relations are open to a number of different interpretations. Let us review then the factors which affect the development of favorable public relations for the motor carrier industry, fleet operator or individual operator.

It is inevitable that when a new and competitive service comes into its own, through public acceptance, the older form will put up a fight to hold what it is losing—often without realization that the change will actually prove to be a blessing in disguise. We certainly cannot find fault with the criticisms directed at those operators of motor vehicles who deliberately and intentionally violate weight and other regulations which are, until revised, the law of the land. The propaganda and criticisms directed at the industry as a whole, however, are hard to take.

As to the lack of public information and understanding of the motor industry—that will be a constant job for each and every operator, employee, stockholder and motor carrier association to correct for a long time. Information given to the public may be diverse and romantic but it always must be accurate, in good taste, informative and, I hope, never in the mud-slinging category. The trucking industry has a great story to tell but most people don't know the story despite the fact that it is the second largest industry in the country from the standpoint of employment and nearly everyone is dependent on motor transport for direct services or because it is holding down the cost of living or rather is keeping the cost of living from going a lot higher.

My remarks emphasize the problem we face in developing favorable public relations with so many operators in the business, over 22,000 subject to the Interstate Commerce Commission alone, and many thousands more who are not so regulated. To crystallize the thinking of so many in the same business and yet having dissimilar interests at stake is no small task in itself let alone convincing the public that its blessing should be forthcoming on an industry so constituted that it cannot fail to harbor some selfish cantankerous and non-conformists in its midst.

Then, too, there is the problem arising from the fact that within the ranks of the commercial motor carrier industry there are many different types and forms of operation. Here again I can only emphasize that we all need good public relations whether we are for-hire interstate general freight carriers, private carriers of petroleum products, passenger bus operators, household movers, intrastate livestock haulers, or perform a local milk delivery service. The means by which we develop our public relations off the highway may vary, but while our vehicles are on the roads and streets they must be operated by drivers who know and appreciate the importance and value of good will, which means that they must lean over backwards in driving safely, being courteous to pedestrians and other users of the streets and roads as well as customers.

Acts of highway courtesy and emergency assistance rendered to motorists in distress are too numerous to mention here. Our company alone receives an average of three cards or letters daily thanking us for some act performed by a line haul driver. Other companies are experiencing similar results in response to the emphasis placed by top

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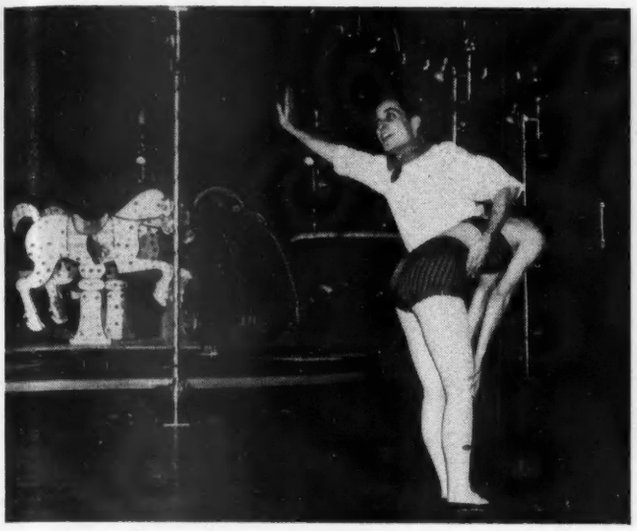
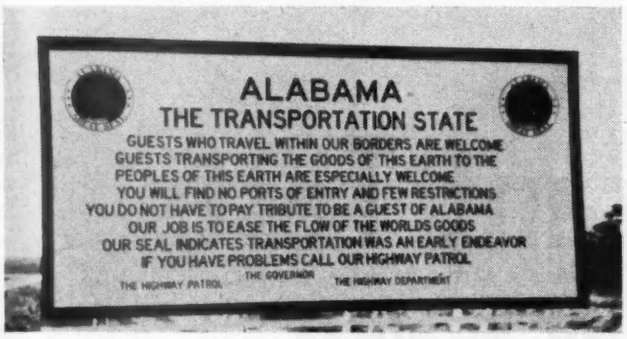
PICKED pix OF INTEREST TO FLEETS

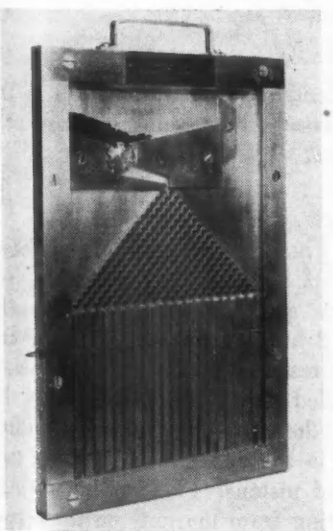


◀ Attractive seat covers were displayed early this year at a Ford suppliers show. Presented as a circus routine, the dance group featured a number "Carousel Capers," where the dancers were clad in "seat cover" material. The suppliers were entertaining at the annual meeting of sales personnel of Ford Motor Co. in New Orleans.


ALABAMA
THE TRANSPORTATION STATE
GUESTS WHO TRAVEL WITHIN OUR BORDERS ARE WELCOME
GUESTS TRANSPORTING THE GOODS OF THIS EARTH TO THE
PEOPLES OF THIS EARTH ARE ESPECIALLY WELCOME
YOU WILL FIND NO PORTS OF ENTRY AND FEW RESTRICTIONS
YOU DO NOT HAVE TO PAY TRIBUTE TO BE A GUEST OF ALABAMA
OUR JOB IS TO EASE THE FLOW OF THE WORLDS GOODS
OUR SEAL INDICATES TRANSPORTATION WAS AN EARLY ENDEAVOR
IF YOU HAVE PROBLEMS CALL OUR HIGHWAY PATROL
THE HIGHWAY PATROL
THE GOVERNOR
THE HIGHWAY DEPARTMENT

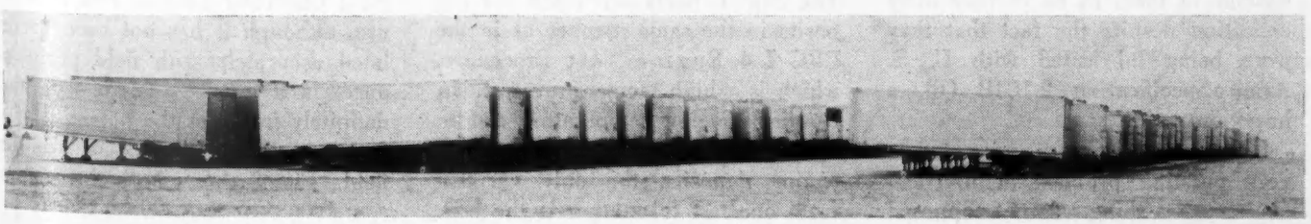
◀ Alabama's welcome sign reads "Guests who travel within our borders are welcome. Guests transporting the goods of this earth to the peoples of this earth are especially welcome. You will find no ports of entry and few restrictions. You do not have to pay tribute to be a guest of Alabama. Our job is to ease the flow of the worlds goods. Our seal indicates transportation was an early endeavor. If you have problems, call our highway patrol."

▼ This new muffler, built for Consolidated Freightways, Portland, Ore., was found to be the quietest yet manufactured in recent West Coast tests. The unit was made by the Nelson Muffler Corp. In the picture Leland James, president of ATA looks on as Thomas D. Taylor, general manager of Freightliner Corp., explains the principle behind the new muffler to James Sharkey, secretary of Oregon Motor Transport Association.



To demonstrate the advantage of a quality-control chart, this device is made by Timken Roller Bearing Co. It has 300 black steel balls ⅛ in. diameter. By rotating the wheel at the top, the balls enter the opening, pass through a maze of fiber pins, and drop into slots. The maze is covered. A simple explanation is made of the theoretical probability that the balls should fall into slots 1-2-3, etc. The results have been very close to the theoretic probability factor.

▼ Over 1000 badly needed trailers jam parking aprons of Baer Field near the Ft. Wayne, Ind. plant of Fruehauf Trailer Co. Tire shortages are blamed. The units represent more than six million dollars worth of trailers being held up for this reason. If truck operators desire delivery, they must provide casings from their own stock. Only a small number of fleet operators have done this.



Gulf tests show that fuels as well as lubricants must be carefully selected to offset ill effects of light load, low temperature

by W. A. Howe
Chief Fuels and Lubricants Engineer
Gulf Oil Corp.

Fig. 1. Piston from an engine test in which a so-called "dirty" gasoline was used. Note skirt surface

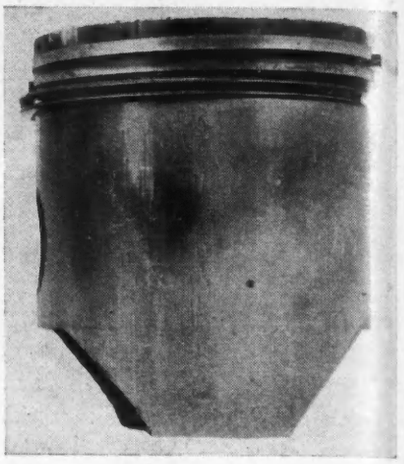


Fig. 2. This piston was taken from another test with so-called "clean" fuel. No deposits are evident here

Fuel & Lubricant Tests

for Light Duty Engines

PRIOR to the fall of 1947 almost all of the known development work on lubricating oils was aimed at the relatively few engines engaged in so-called heavy-duty or high temperature operation, with little thought being given to the development of lubricating oils or other products which would satisfy the requirements of the light load, low temperature service. Contrary to popular conception, it is the light load, low temperature operation which imposes the severe service on engines and it is the high temperature heavy-duty operation which, in general, is easier on engines and lubricating oils.

During the war, the author had the opportunity to examine a great many Army engines, both in this country and overseas, and found a large percentage of them to be in very dirty condition despite the fact that they were being lubricated with U. S. Army Specification 2-104B Oil, a heavy-duty oil.

These dirty engines presented a very puzzling problem at first because such a thing was not supposed to happen with heavy-duty oils. Eventually it was decided to study the situation from the fuel side. A laboratory engine test using a Chevrolet engine and a test procedure approximating, but not quite the same and not quite as severe as the conditions encountered in the Army post, camp, and station type of service, was developed and modified, and later became the CRC FL-2 Engine Test Procedure. In this test procedure, which was designed to test the extent to which the fuel affects engine deposits, the operating conditions are approximately 90 deg. F. jacket water temperature and 155 deg. F. crankcase temperature which is higher, of course, than that encountered in stop-and-go driving. The period for the test is 40 hours at 45 hp at 2500 rpm. The engine parts are rated for deposits in the same manner as in the CRC L-4 Engine Test Procedure, which is a high temperature test. In running the low temperature test to determine how various fuels affect engine deposits, the only variable from one test to another is the fuel. Incidentally, a heavy-duty oil is the reference oil used in this test procedure.

Effect of Fuel

IN Fig. 1 are shown one piston from an engine test in which a so-called "dirty" gasoline was used. In Fig. 2 are shown one piston of another test, but with a different fuel, a so-called "clean" fuel. As may be seen, there is a considerable difference in the appearance of these two sets of pistons. FL-2 engine ratings resulting from the tests on these two fuels are noted at 70 for gasoline A, 88 for gasoline B. Heavy-duty oil is used as the lubricating oil in both of these tests. This reference oil was approved under U. S. Army Specification 2-104B. It is believed that the FL-2 Chevrolet Engine Test Procedure, although it has not been correlated accurately with field performance, is a good go-no-go tool and definitely indicates the potential of a fuel to produce engine deposits in the field. Fig. 3 shows both the pistons

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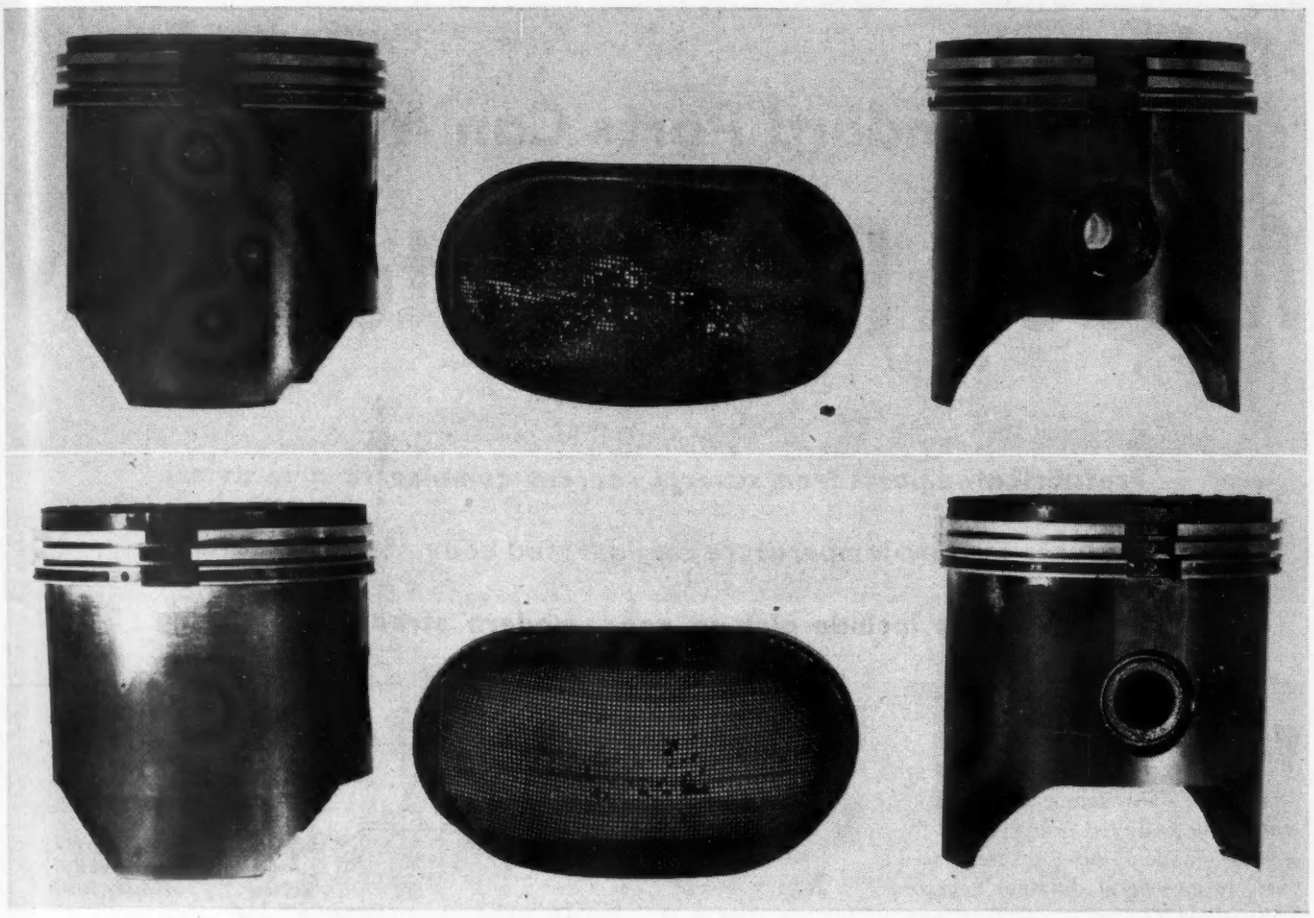


Fig. 3. Top. Pistons and screen from test engine after 12,000 miles of stop and go driving, with premium oil and commercially available fuel. Fig. 4. Above. The same parts after 11,000 miles in same operation, using same type of oil but with a special fuel of high stability

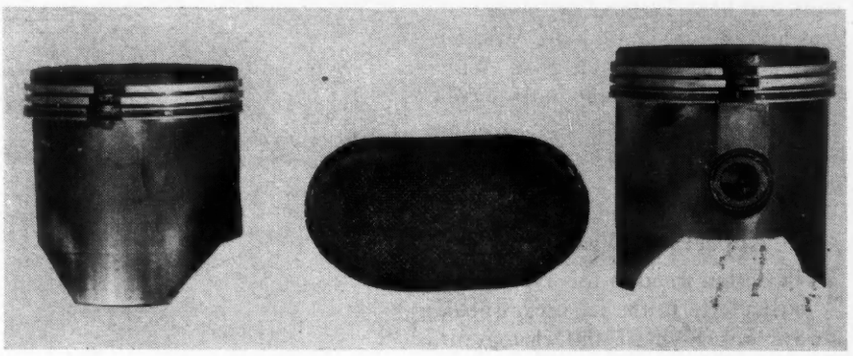
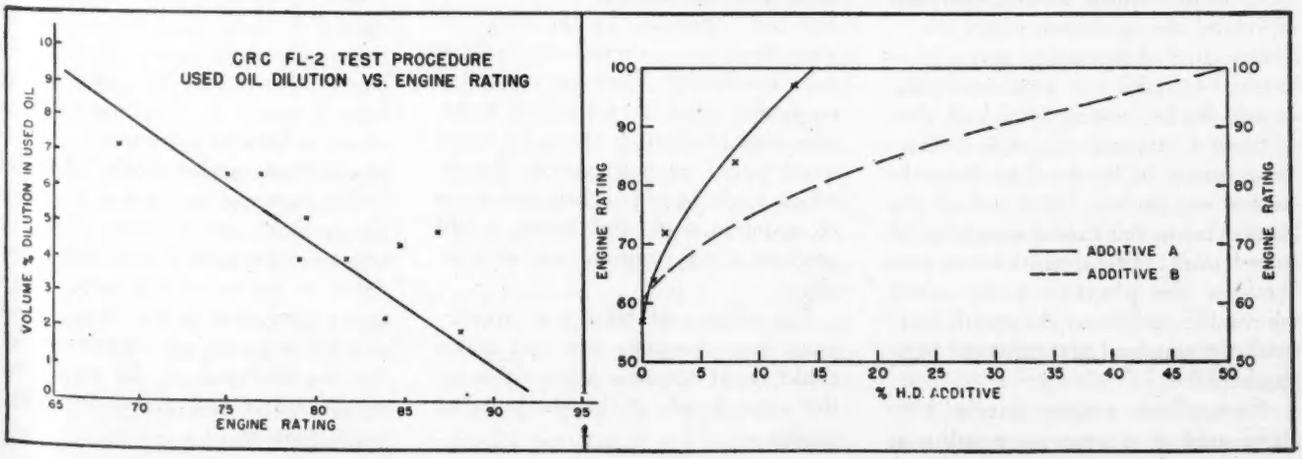


Fig. 5. Right. Engine parts after 28,000 miles on a stable gasoline. From these parts it may be seen that in low temperature operations even a stable fuel does not guarantee clean engines

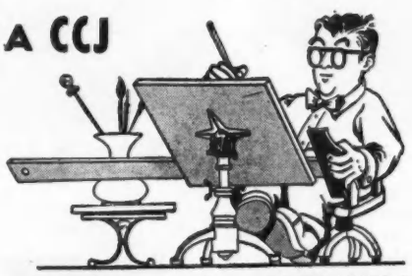
Fig. 6. Below, Left. Graph shows how dilution affects engine deposite in the FL-S test procedure. Fig. 7. Below, Right. Graph shows the effect on engine rating of various concentrations in the same base oil of two HD additives



Standard Parts Can Make

Modern Refrigerated Body

Prefabricated parts from several sources combine to give deluxe features for low-temperature refrigerated body. Special features of this design include pick-up rear, modern streamlined styling



Designed and Copyrighted by **E. M. Westberg**

IN THE FOURTH DESIGN of this series, a low temperature refrigerated-type body has been selected for a study in combining prefabricated parts from several different sources. This should demonstrate to fleet operators and body builders the unlimited possibilities of developing unusual body types at reasonable cost. With the number of different parts available today from numerous sources, the possibilities in this field are almost unlimited.

Appearance Features

THE design trend in this type body, particularly in the ice cream field, always has been of the custom or deluxe body type. Thus, every effort was extended to produce this effect with standard parts. The highlight of this design is the long, sweeping rear fender which blends into and develops the open-rear utility body. Fabrication of this fender was accomplished by taking a standard radius crown fender, cutting it in half, then adding a streamlined vertical body rear corner in the back to form the top-crown portion. The rest of the fender below this crown simply is flat panel work. This detail can be seen best in the phantom view, which shows the outline of the entire body with the standard prefabricated parts highlighted.

Streamlined corner panels have been used of as generous a radius as was considered practical. These, too, are all highlighted in the phantom view (the small illustration).

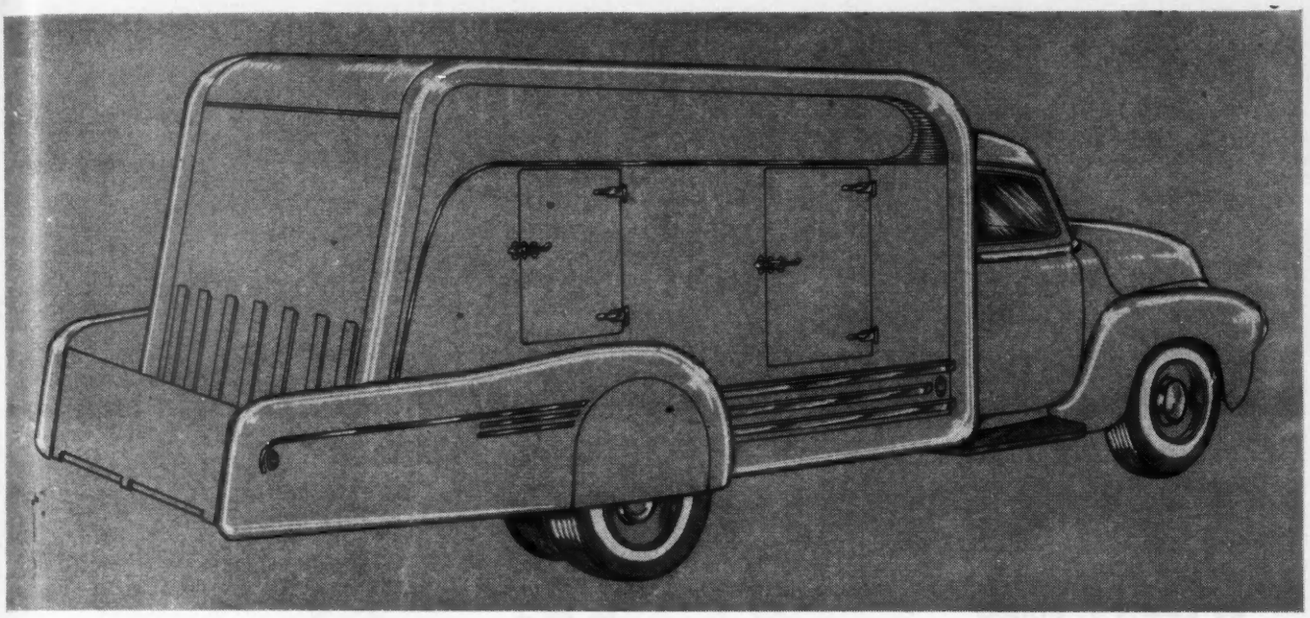
Rub rail treatment depends somewhat upon the locality in which the unit will operate. In the phantom view, two heavy, curved, streamlined rails are shown. They are suggested on bodies used in congested areas. The other illustration shows the lower front panel of corrugated design, which might be of polished aluminum or stainless steel, and which would produce a very unusual and striking effect.

For additional trim and appearance, door openings and kick plates could be of stainless steel, either of the satin finish or highly polished grades.

Operating Features

THIS body is designed basically for ice cream delivery. The main or forward portion being for product loads, and the after section an open pick-up to carry cabinet, advertising signs, milk cans, cases and the many other items used around this type of operation. This same design, of a smaller size and capacity, makes an excellent unit for special deliveries.

Cumbersome, and many times not too sanitary, wood racks in the interior compartments have been eliminated by the use of standard square-type corrugation on the floors. These provide adequate air circulation under the load and, at the same time, permit easier and much more thorough cleaning.



Fourth in This Series

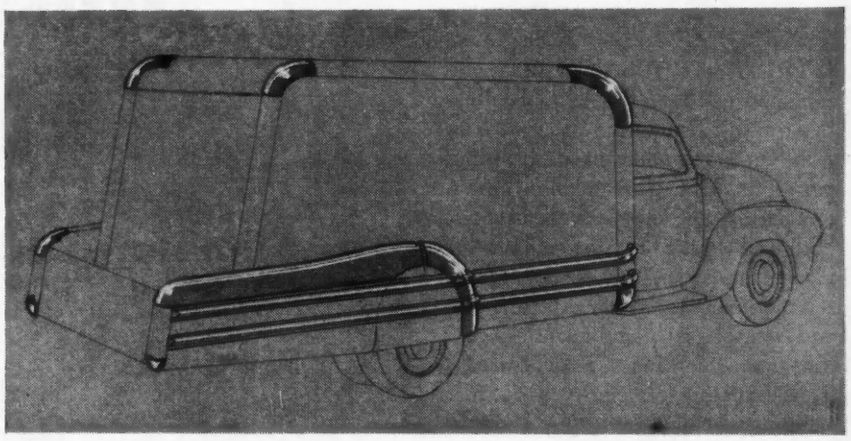
For the information of readers who may have missed previous issues, the designs included in the current series are:

Bakery Body .....September, 1950
Bottler's Body ....December, 1950
Universal Van .....February, 1951
Ice Cream Body.....This Issue

Two additional body styles are to come:

Department Store .....July, 1951
Insulated Van ....September, 1951

Suggestions for other custom-styled body designs will be welcomed by the editors.



This same corrugation is used for the floor of the open pick-up rear, providing a light, strong long-lasting and serviceable floor.

Stainless steel for cleanliness, both in appearance and ease of maintenance, is used around all door openings and kick plates.

Design Features

IN ADDITION to the standard prefabricated curved panels and corner caps, all of the basic structure of the body is fabricated from standard steel sections.

Production costs have been considered fully with the careful use of a minimum number of different sections. Sections used are of a type and design which merely require cutting to proper length, with all notching and fitting of matching parts eliminated.

The body is so designed that the sides, ends, roof and understructure framing may be handled as unit subassemblies, which then are erected to complete the body. Then it is lined with wood to the required thickness of insulation, and the load tanks, previously assembled outside the body, installed. Finally, the roof is dropped in place. It may be assembled, including insulation, as a complete unit ready to install on the body.

It is suggested that the tanks be made either of galvanized or stainless steel with horizontal beads rolled in them, around all four sides. They should be spaced even car heights apart to insure more efficient air circulation around all sides of the load. These tanks are further backed up with plywood between them and the insulation.

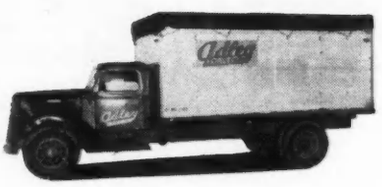
Any recommended and acceptable type of body insulation may be used on this design. Any available type of refrigeration system also can be installed without materially altering the over-all and general appearance of the body. Before the lining and insulation are installed, the entire steel body structure should be given a thorough spray coating of rust and sound proofing material. There are many commercial preparations that will do a capable job. These are available through normal paint supply channels.

Left, Adley uses Remington Rand's Film-a-Record. Right, main office, minus 166 files, plus fast filing system

Microfilm Filing

Eliminates 166 File Cabinets

By Lewis T. Bolger



Carrier with 11 terminals breaks bottleneck in main office and speeds handling of 15,000 orders weekly

THIRTY THOUSAND tiny photographs a week keep the Adley Express Co.'s waybill accounting procedure up to the minute, and cut daily filing operations from a hectic hour-upon-hour pace to smoothly-paced minutes.

Snowed under by the masses of bills, receipts and other documents accumulated for a variety of very good reasons (including the ICC three-year holding requirement), Adley Express file clerks were fast becoming so numerous they were in each other's way. Necessary office space was becoming a serious problem.

Then, late in 1947, General Traffic Manager L. J. Achorn and Office Manager P. J. Cappetta sat down with systems and methods technicians to solve the problem. Consideration of the problem led to decision that the following, in order of importance, were to be the chief aims:

1. Speeding of the filing procedure.
2. Developing a simplified, foolproof indexing.
3. Cutting supplementary filing operations in the terminals.
4. Reduction of filing space in the home office at New Haven, Conn.

15,000 Shipping Orders Weekly

A FIVE-STATE trucking operation (Connecticut, Rhode Island, Massachusetts, New Jersey and Pennsylvania) Adley Express Co. operates 11 terminals. The Adley fleet currently includes upward of 269 trailers, 75 trucks, 100 tractors and 14 service cars. The weekly tonnage hauled over its own lines (Adley has no inter-line operations) means a minimum of 15,000 shipping orders and a like number of delivery receipts to be recorded on microfilm.

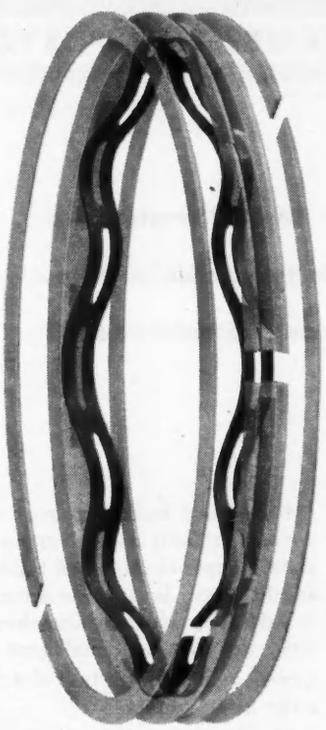
Invoicing for shipping charges is handled in each of the 11 terminals (from point-of-origin depots in all cases). Under the old procedure it was necessary to file shipping orders alphabetically by shipper in the point-of-origin terminal and in the destination terminal and the home offices. The destination terminal and the main office also maintained an alphabetical file by consignee. All of which meant a complicated—and duplicate or triplicate—filing system.

The answer, from the standpoint of speeding filing procedure, was the installation of a microfilming camera and a viewer (reader). The next was the development of a simple and highly effective on-the-film method of indexing.

Results were immediate and highly

(TURN TO PAGE 86, PLEASE)

Sealed Power Piston Rings

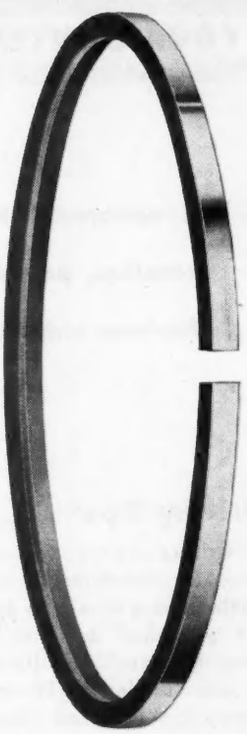


MD-50 STEEL OIL RING

The only ring with the FULL-FLOW SPRING

Best for Oil Control even in

BADLY TAPERED and OUT-OF-ROUND BORES



CHROME FACED RINGS

for triple mileage

Latest scientific development to fight

HEAT, FRICTION CORROSION, ABRASION

GET IT FROM YOUR JOBBER

SEALED POWER CORPORATION, MUSKEGON, MICHIGAN

Sealed Power Piston Rings

BEST IN NEW TRUCKS BEST IN OLD TRUCKS

FREE PUBLICATIONS

FOR YOUR CONVENIENCE USE THIS POSTCARD

A selected list of the latest literature — catalogs, pamphlets, charts—chosen to help fleetmen improve operation and maintenance.

L80. Driving Tips

"Crazy Drivers" is the title of this 16-page booklet distributed in the interest of safe driving by a body builder. Originally published by the Traffic Safety Assn. of Detroit, this illustrated humorous account depicts 12 sketches showing stupid, selfish and dangerous things some drivers do to mark them as "crazy" drivers. Cartoons ridicule the inattentive driver, the careless maniac, the speeder, the show off and the impatient type car pilot. A quick reading of the booklet will prove not only amusing but also instructive for your men. Write L80 on the postcard for your copy.

L81. Safety Leaflets

Two new traffic safety leaflets, "Will You Be Victim X?" and "A Daily Reminder," have been published by the accident prevention department of the Association of Casualty and Surety Companies as part of its intensive campaign this year to reduce vehicle deaths and injuries. "Victim X" makes a timely appeal for caution by all who drive or walk. "If you're a traffic gambler," it warns, "remember the cost! Nearly 1,000,000 dead in fifty years—motorists and pedestrians—and 30,000,000 injured in traffic accidents."

The second leaflet is aimed at speeding and drinking-and-driving as the two major causes of increased traffic deaths and injuries. It makes a direct appeal to drivers to pledge themselves to "always drive at an intelligent rate of speed" and never to take the wheel of a car after drinking.

Single copies of the leaflets may be obtained without charge by writing L81 on the postcard.

L82. Trucking Story

Here is a little booklet entitled "Curiouser and Curiouser," containing a humorous account of a truck driver's adventure with the state size and weight laws on a cross country trip. Written in a sort of "Alice in Wonderland" style, John S. Worley shows how ridiculous our laws are—and how confusing they can be to an over-the-road truck operator. Write L81 on the postcard for your copy.

L83. Materials Handling

"Aluminum in Materials Handling," a collection of seven articles on how the lightweight metal saves manpower and effects other economies in modern handling equipment, is available to the fleet field. Prepared in 5½ x 8½ in. 16-page booklet form by The Aluminum Association, individual copies may be had by writing L83 on this postcard.

L84. Cab Heating Tips

Fleetmen who are installing cab heaters or building bodies with heating equipment designed into them will be interested in this issue of the Eaton Forum in which appears an article on "Practical Considerations in Automotive Heating Design." With diagrams and a detailed study of the problems of heating equipment design, the author outlines requirements for efficient equipment. His formula for predicting performance by use of the "heating efficiency concept" will help designers and body builders to provide sound heating equipment for their vehicles.

Write L84 on the postcard for a copy of this publication.

L85. Gear Oil Additives

The April issue of *Lubrication* features an article on the subject of gear oil additives, and the Texas Co. has offered to make it available to fleetmen in the interest of improved lubrication techniques.

In 48 pages of illustrated material the authors provide a simplified description of how various types of gear lubricants are designed for specific application. They emphasize the importance of understanding EP additives and of selecting the proper gear lubricant to fill individual needs.

The diagrams and drawings are in themselves of great interest to fleet shops. One section shows seven types of gears and shows how they work together. Other drawings are included to show typical gear failures and how to diagnose the causes of such breakdowns. A chapter on Why Gears Fail will be valuable to the fleetman in assisting him to obtain more satisfactory life from various assemblies.

Write L85 on the postcard for your free copy.

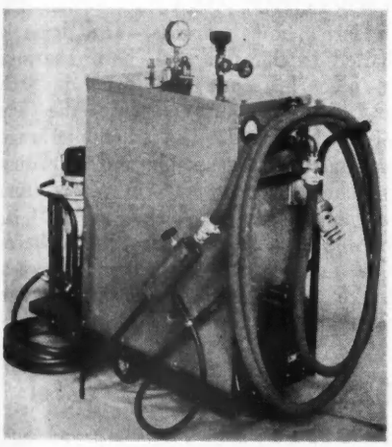
NEW PRODUCTS

FOR YOUR CONVENIENCE USE THIS POSTCARD

Illustrating and reviewing newest developments in parts, accessories, shop equipment and tools. For more information use the attached postcard.

P189. Steam-Jet Cleaner

A small, all-electric, economy steam cleaning unit has been added to the Speedylectric line of Livingstone Engineering Co., Worcester, Mass. The



JC-20 will clean machinery and equipment without the hazard of fire, with a minimum of operational noise, and without annoying fumes, the maker states.

Among the advantages claimed for the JC-20 is the small quantity of solvent used in proportion to the amount of water. Then, there is no flooding of the work area, and no chance of operating the unit at low water level. The design of the unit uses the water as an electrical resistance element. When there is no water, no electric current can pass between the electrodes and no steam is generated.

P190. Fork Lift Truck

A fork truck for load handling up to 2000 lb has been developed by Baker Industrial Truck Div., Baker-Raulang Co., Cleveland, Ohio. The new model FS has many advantages of small size and maneuverability listed in detail by the manufacturer. Among the unique features is the detail of operation. The operator's position is such that he may see the load forks clearly at all times. In addition, the forward or reserve control is by the accelerator pedal. There are five speeds forward and five reverse. As an added brake, the operator may shift into reverse when descending a ramp or attempting to stop suddenly. The service brake is mechanical, with air cooled drum surfaces.

P191. Engine Flush

Sludge, lacquer and varnish from internal surfaces of gasoline engines may now be removed without dismantling by using the new Gulf Motor Flush made by Gulf Oil Corp., Pittsburgh, Pa.

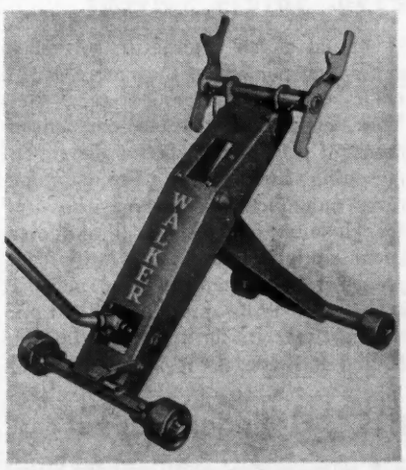
The liquid is poured into the crankcase and circulated through the oil lines, screens and pans into the oil rings, compression rings, and valve stems. The manufacturer states that the chemical dissolves or holds in suspension all foreign material yet will not harm the metal surfaces.

P192. Truck Trestle

If the job calls for a safe, 10-ton truck trestle, there is one now made by Manley Div., American Chain & Cable Co., Inc., York., Penna. The low position is 30 in., while the extended position is 50 in. The trestle is braced, welded, and has a locking pin that prevents accidental release.

P193. One-End Lift

Either end of a car or truck may be lifted to working height by using the Walker Mfg. Co.'s hydraulic one-end lift. The model 76 features a self-contained hydraulic power unit of extreme lifting range. The holding arms fit under the axle housing in the rear or across the I beam axle in the front.



Two safety devices keep the unit intact and prevent accidental lowering. One is a pressure release valve which eliminates the chance of exceeding the lift's capacity. The other is in the de-

(TURN TO NEXT PAGE PLEASE)

New Product Descriptions

Continued from Page 75

sign of the pressure release pedal. In addition, the wheels may be locked to prevent drifting.

P194. Emergency Lamp

When regular lighting systems fail, an automatic switch in this new emergency light turns on its battery supply. The lamp fits a standard 7½ v lantern battery and plugs into any female socket. It is recommended in areas where emergency circuits are not available

P195. Band Saw Device

The capacity of the Delta Standard 14 in. woodworking band saw is normally 6 in. With the use of No. 894 height attachment, the saw will take work up to 12 in.

The attachment consists of a cast-iron raising block, the necessary fittings and a longer hexagon guide post. The increased cutting capacity does not overtax the standard blade and motor equipment of the model, the manufacturer states.

P196. Safety Solvent

Offered as an alternative solvent to carbon tetrachloride, the new FO 128, made by Fine Organics Inc., New York, claims all the cleaning advantages of CO2 without the danger of poisoning from fumes. The manufacturer announces that it may be used for cleaning of mechanical and electrical equipment and parts with complete safety to materials and men. It is a water-white product with rapid drying time. Its flash point is 140 deg F. and it leaves no residue on drying.

P197. Cylinder Sleeve

A nitrided steel split cylinder sleeve with an outer coating of copper plate is being made by Mitriliner Co., Chicago. In releasing the product, the manufacturer states that the steel processing is new to the automotive field, having been applied formerly only to aircraft engines.

The patented nitrided finish inside the sleeve increases hardness and friction resistance between rings and wall, the announcement stated. The sleeve is finished to a close tolerance as to bore measure and sleeve thickness.

P198. Spring Hose Clamp

A self-tightening hose clamp is offered by Corbin Hose Clamp Div., American Hardware Corp., New Britain, Conn., that uses spring tension in place of the usual tightening lugs. The clamp is installed by squeezing the ends of the spring with pliers, slipping the clamp over the hose connection, and releasing. The clamps come in sizes from ⅜ in. to 2⅝ in. OD.

P199. Plug Feeler Gage

Bonney Forge & Tool Works, Allentown, Pa. has a new feeler gage which has eight wire feelers, clearly marked with size, which fold like a pocket knife. The gage also has an electrode bending tool attached.

P200. Torque Wrenches

A new series of torque wrenches for ⅜ in. x ½ in. and ¾ in. square drives has been announced by Bonney Forge & Tool Works, Allentown, Pa. The new torque wrench features a broad tension bar designed to provide easy access to tight places. The calibration scale is available in foot-pound or inch-pound calibrations.

P201. Oil Heat Control

Attached to the radiator core, the new "Thermotrol" oil temperature regulator acts in a heating-cooling capacity for motor oils. It may be used in any type automotive or stationary engine using forced-air cooling.

In cold weather, the heat from the engine is used to keep the oil fluid by a thermostat arrangement. Once the oil is at good operation temperature, the thermostat opens and oil circulates through the cooling system similar to the radiator water. The manufacturer states that this constant temperature allows the oil to keep its lubricating qualities far beyond the accepted limits, prevents summer overheating, and allows quick starts even in sub-zero cold. The manufacturer is Continental Thermotrol Inc. New York.

P202. Metal Grating

A design of metal grating that makes it adaptable for a score of uses in the auto shop has been developed by Bustin Iron Works, Inc., New York. It is especially useful on platforms, stair treads, ramps, machine treadles, engine rooms, etc., where excessive grease, oil or water make walking and working conditions hazardous. The construction allows free drainage and may easily be cleaned.

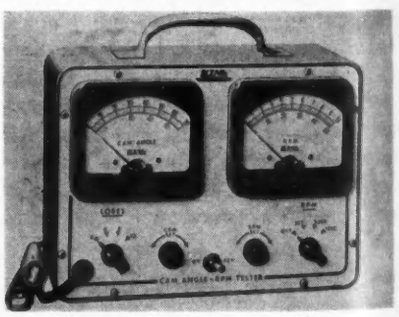
P203. Brake Drum Gage

A tool designed to eliminate guesswork in the mounting of new brake drums is being manufactured by Safety Equipment Mfg. Co., Allison Park, Penna. It is a dial-faced gage, mounted on a spindle which is attached by wing-nut to a center piston.

Here's how it works. The drum is bolted to the rim with both bearings in place. A cone is inserted in each end of the rim through which the gage piston is placed. The assembled gage is rotated on this piston and a reading is taken. Adjustments in rim-to-drum alignment may be checked to .0001 in. In this way, the manufacturer believes that savings will be realized between brake adjustments and relinings due to out-of-round drum placement.

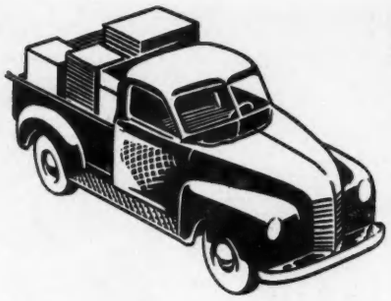
P204. Tachometer Tester

For testing cam angle and rpm and locating many trouble spots in the ignition-timing system, there is a portable tester being made by King Electric Co., Cleveland, Ohio. It has two dials mounted high in the panel below which are the controls in a single row at the bottom.



The cam angle meter measures breaker-point dwell and detects worn distributor housings, breaker plates, defective bushings, etc. The rpm meter is calibrated from 0 to 1000 and 0 to 5000 permitting correct ignition, carburetor and governor adjustments.

The unit is powered independently from the automobile system by using flashlight cells to operate the tester.



On Any Truck

Overloads Call for Greater Power Brake Capacity

For Every Make and Model

from the *Lightest*

to the LARGEST

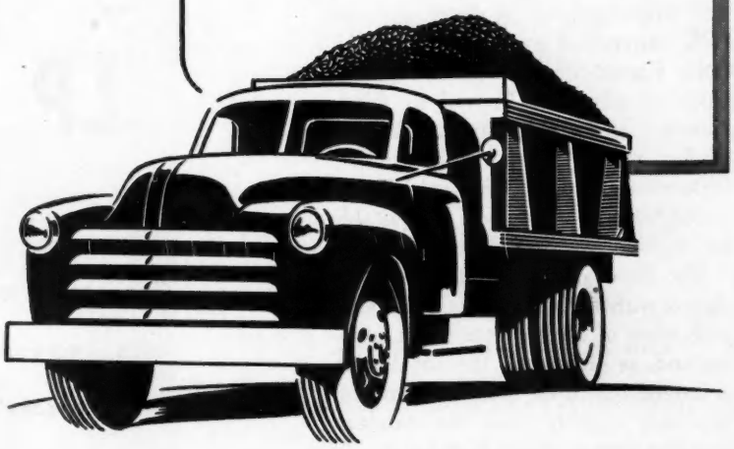
Greater braking efficiency means shorter, smoother stops at any speed, with any load.

Extra braking control means better schedules with faster road speeds—less time wasted slowing down.

Added brake power allows shorter application of brakes, assures longer lining and drum life.

Reduced brake maintenance requirements mean more time on the road, less expensive down-time in the shop.

Improved brake performance assures increased driver efficiency, greater safety for *any* truck.



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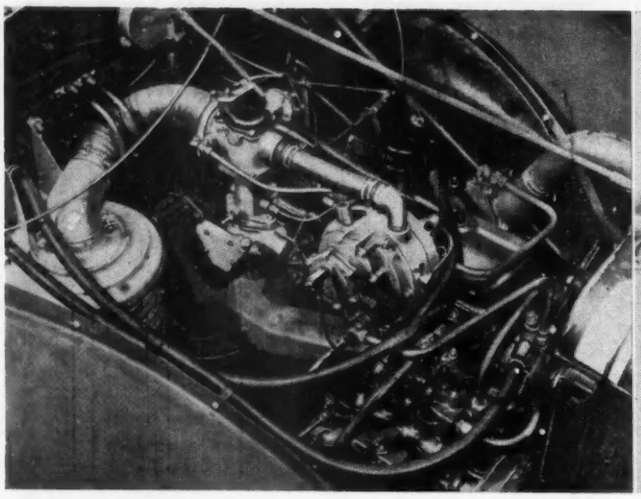
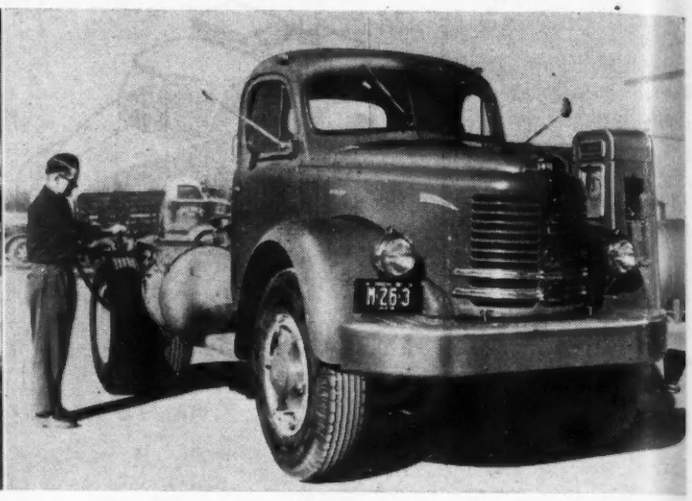


Right side of engine showing installation of regulator, the LP gas carburetor and lines. A "cold" type manifold is required for LP gas



A special tank and filler valve is necessary with LP gas installation. Here operator fills tank from an outside storage installation

Reo Offers High Compression

LP Gas Engine

Conversion system for the Gold Comet engine, with increased compression ratio, new manifolding makes use of liquefied petroleum possible

SPURRED by an insistent demand on the part of fleet operators, Reo Motors, Inc., is developing an LPG conversion system for the OA Gold Comet engine, primarily for truck installation. Proved by dynamometer and field testing, this conversion will soon be available either factory-installed on new vehicles or in the form of a complete kit suitable for engines now in service.

The Reo conversion has been designed with a view to maximum simplification of components and plumbing and, as illustrated, the installation is indeed free from complication, differs only slightly from the standard gasoline engine set-up to the eye. In the first place, certain basic changes are made to obtain a compression ratio of 8.3 to 1. Although LPG fuel will tolerate higher compression ratio, Reo engineers found it expedient from the standpoint of overall cost economy to start with 8.3 to 1.

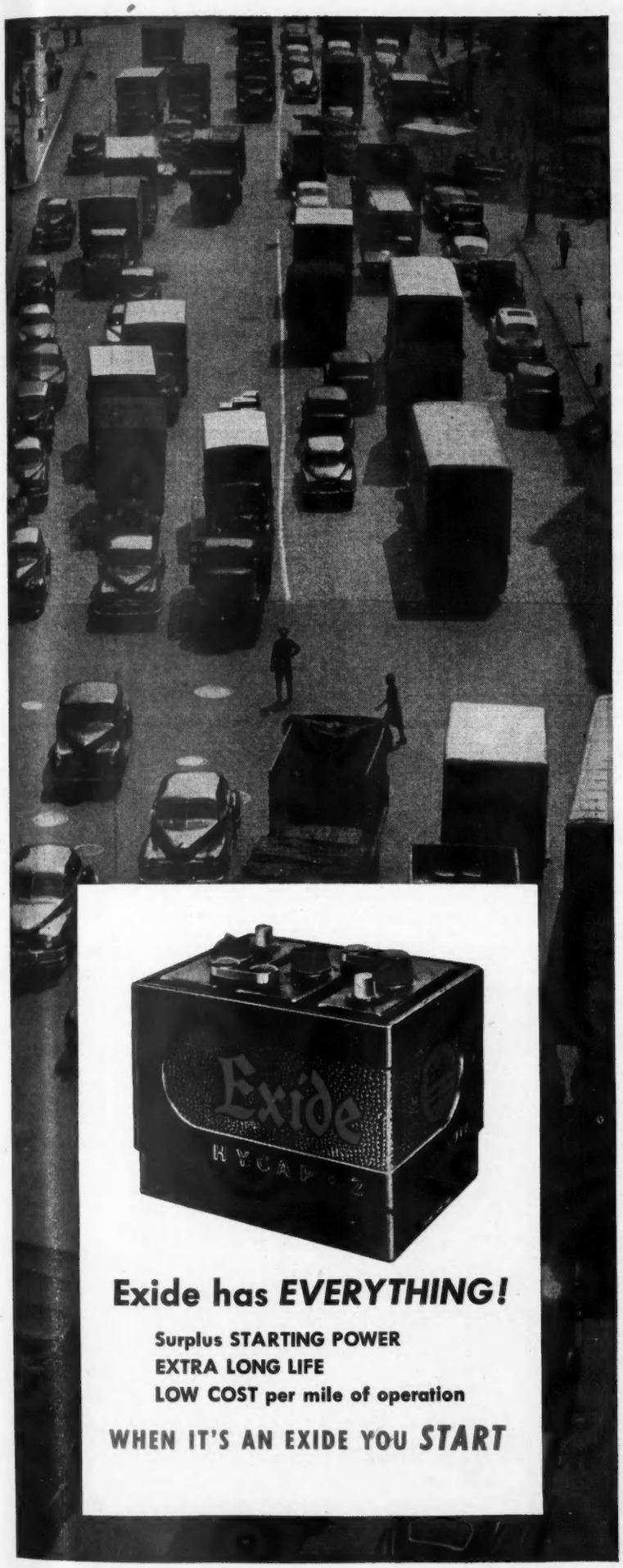
Increased compression ratio is effected simply by introducing a set of new pistons having a flat head instead of the concave head used in the standard gasoline engine. At the same time the dimension from the center of the wrist pin to the top of piston head has been suitably increased. In addition, Reo supplies the "military" cylinder head instead of the standard head.

Because successful engine operation when burning LPG depends upon an induction system free from hot spots and adequately cooled, manifolding is entirely new for LPG conversion. The principal change is found in a complete divorce of intake and exhaust manifolds, eliminating the connection between the manifolds as it exists in the standard engine. Thus new manifolds are required for this purpose.

Replacing the usual carburetor is a special mixing valve — installed in place of the carburetor—and an Ensign regulator valve mounted at the front end of the engine on the right hand side. Since the regulator functions as a controlled expansion valve, severe icing incident to the drastic temperature drop within the valve is eliminated to all practical purposes by means of water-jacketing which circulates the heated engine cooling system fluid by connections directly from the water pump.

Standard gasoline tanks are replaced by special pressure storage tanks. These tanks constitute another element of the conversion system. In practice, the fuel tanks are refilled at service stations by pumping the fuel in liquid form through a hose connection which is attached to the fill valve on the pressure tank.

To complete the installation the mixing valve is installed directly over a King-Seeley velocity governor to provide the same overspeed protection as on standard engine.



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Surplus STARTING POWER
EXTRA LONG LIFE
LOW COST per mile of operation

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1888
DEPENDABLE BATTERIES FOR 63 YEARS
1951

Truck Specifications Table

Listed below is a complete revision of the Sterling truck specifications. The complete table of truck specification of all makes including these revisions will be published in the June issue. Specifications are supplied by the manufacturer

Line Number	MAKE AND MODEL	Chassis List Price	WHEEL-BASE Minimum Standard	WHEEL-BASE Maximum Standard	Gross Vehicle Weight for Normal Service	Chassis Weight (See definition)	TIRE SIZES D-dual rear S-single rear: Standard Front and Rear	TIRE SIZES: Maximum Authorized Tire Size (Duals unless noted)	ENGINE DETAILS: Make and Model	No. of Cylinders, Bore and Stroke	Displacement	Comp. Ratio	Torque lb. ft.	Max. Brake H.P. at R.P.M. Given	Main Bearings: Number Diameter and Length	Governor Standard	TRANSMISSION: Make and Model	Forward Speeds	REAR AXLE: Make and Model	Gear and Type	Drive & Torque	Gear Ratio Range in High	FRONT AXLE: Make and Model	BRAKES SERVICE: Make Location Type Operation	Lining Area	Drum Area	Drum Material	Hand Location Type	C-A Dimensions (Min. Std. W. B.)	FRAME: Side Rail Dimensions	Type
1	Sterling																														
2	▼▼(T)..TB1301T		143	153	26000	▲10375	10.00/20	11.00/22	Wau 140GKB▼	6-4¼x5½	525.6	4.425	172-2700	7-3¼x15½		Y	Fu 5A620	5	Tim R100P	FHy	R3.70-7.40	T	FD900DPA	Ws4IA	560	930	A	TX	67		A
3	▼▼(T)...TB1501T		143	153	30000	▲11100	11.00/20	12.00,24†	Wau 140GZB▼▼	6-4½x5½	555.6	4.450	183-2600	7-3¼x15½		Y	Fu 5C650	5	Tim U200P	2F	R5.91-9.76	T	FE900DPA	Ws4IA	622	1034	A	TX	67	9x3¼x¼	A
4	(D)(T)TA1501TD		173	181	30000	▲13125	10.00/20	10.00,22	Cum NHB600	6-5½x6	743.15	537	200-2100	7-4½x13½		Y	Fu4A86-3B65	12	Tim S200P	2F	R5.91-9.76	Tim	FE900DP	Ws4IA	622	1034	A	TX†	77		A
5	(D)(T)TA1511TD		173	181	30000	▲13250	11.00/20	11.00/22	Cum NHB600	6-5½x6	743.15	537	200-2100	7-4½x13½		Y	Fu4A86-3B65	12	Tim S200P	2F	R5.91-9.76	Tim	FE900DP	Ws4IA	622	1034	A	TX†	77		A
6	(D) ...TA1601D		173	231	32000	▲13650	10.00/20	10.00/22	Cum NHB600	6-5½x6	743.15	537	200-2100	7-4½x13½		Y	Fu4A86-3A92	12	Tim U200P	2F	R5.91-9.76	T	FE900DPA	Ws4IA	622	1034	A	TX†	77	9x3¼x¼	A
7	(D) ...TA1611D		173	231	32000	▲13775	11.00/20	11.00/22	Cum NHB600	6-5½x6	743.15	537	200-2100	7-4½x13½		Y	Fu4A86-3A92	12	Tim U200P	2F	R5.91-9.76	T	FE900DPA	Ws4IA	622	1034	A	TX†	77	9x3¼x¼	A
8	.....HA1101		148	215	22000	▲ 8825	9.00/20	10.00/20	Wau 6MZA	6-4¼ 4¾	404	5.6	290	130-3000	7-2⅝x12½	Y	Fu 5A43	5	Tim L100DPH	FHy	R4.11-7.20	Tim	32502H	T4IHV	374	646	A	TX	67		A
9	.....HA1401		148	215	28000	▲10050	10.00/20	12.00/20‡	Wau 6MZA	6-4¼x4¾	404	5.6	290	130-3000	7-2⅝x12½	Y	Fu 5A43	5	Tim R200P	2F	R5.91-10.2	T	FD900DPA	Ws4IA	580	930	A	TX	67	9x3¼x¼	A
10	.....HA1601		148	215	32000	▲10825	10.00/20	11.00/24	Wau 6SRKR	6-4⅝x5½	517.5	5.8	369	125-2250	7-3x13¾	Y	Fu 5A62	5	Tim S200P	2F	R5.91-9.76	T	FE900DPA	Ws4IA	622	1034	A	TX	67	9x3¼x¼	A
11	.....HA1701		148	215	34000	▲11225	11.00/20	12.00/24‡	Wau 6SRKR	6-4⅝x5½	517.5	5.8	369	125-2250	7-3x13¾	Y	Fu 5A62	5	Tim U200P	2F	R5.91-9.76	T	FE900DPA	Ws4IA	622	1034	A	TX	67	9¼x3¾x¾	A
12	.....HB2001		143	211	40000	▲12800	11.00/24	12.00/24	Wau 140GKB	6-4½x5½	525.6	4.425	172-2700	7-3¼x15½		Y	Fu5A62-3A65	15	Tim 7972I	2F	R7.69-11.3	T	FE900DPA	Ws4IA	642	1098	A	TX†	67	9¼x3¾x¾	A
13	(D)...HB2001D		153	211	40000	▲14150	11.00/24	12.00/24	Cum HBD600	6-4⅞x6	672.17	495	150-1800	7-4½x13½		Y	Fu4A86-3A92	12	Tim 79721	2F	R7 69-11.3	T	FE900DPA	Ws4IA	642	1098	A	TX†	77	9¼x3¾x¾	A
14	.....HA1605		164	235	32000	▲12400	9.00/20	10.00/20	Wau 6MZA	6-4¼x4¾	404	5.6	290	130-3000	7-2⅝x12½	Y	Fu 5A43	5	T SBD1555P§	8F	L6 80-13.1	T	FD900DPA	Ws6IA	786	1138	A	TX	83	9x3¼x¼	A
15	.....HA1805		164	235	36000	▲13100	10.00/20	11.00/20	Wau 6MZA	6-4¼x4¾	404	5.6	290	130-3000	7-2⅝x12½	Y	Fu5A43-3A65	15	Tim SD5020P	2F	L6 84-10.2	T	FD900DP	Ws6IA	954	1554	A	TX†	83	9x3¼x¼	A
16	.....HB2205		168	251	44000	▲14550	11.00/20	11.00/22	Wau 140GK	6-4½x5½	525.6	4.425	142-2250	7-3¼x15½		Y	Fu5A62-3A65	15	Tim SD3020P	2F	L6.84-10.2	T	FE900DPA	Ws6IA	934	1554	A	TX†	92	9¼x3¾x¾	A
17	.....▼▼HB2755		168	231	55000	▲15850	11.00/24	12.00/24	Wau 140GKB▼▼	6-4½x5½	525.6	4.425	172-2700	7-3¼x15½		Y	Fu5A62-3A65	15	Tim SW456P	WF	L5 67-8.20	Tim	27462W	Ws6IA	1164	1892	A	TX†	92	9¼x5½x3⅝	A
18	(D)...HA2605D		188	251	52000	▲17950	11.00/20	12.00/24	Cum NHB600	6-5½x6	743.15	537	200-2100	7-4½x13½		Y	Fu4A86-3A92	12	Tim SW456P	WF	L5 67-8.20	Tim	27462W	Ws6IA	1164	1892	A	TX†	92	9¼x3¾x¾	A
19	(D)...TA2105D		188	251	42000	▲16250	10.00/20	10.00/22	Cum NHB600	6-5½x6	743.15	537	200-2100	7-4½x13½		Y	Fu4A86-3A92	12	Tim SW3012P	WF	L4 71-6 17	Tim	FE900DP	Ws6IA	934	1554	A	TX†	92	9x3¼x¼	A
20	(D)...TA2115D		188	251	42000	▲16375	11.00/20	11.00/22	Cum NHB600	6-5½x6	743.15	537	200-2100	7-4½x15½		Y	Fu4A86-3A92	12	Tim SW3012P	WF	L4 71-6 17	Tim	FE900CDP	Ws6IA	934	1554	A	TX†	92	9x3¼x¼	A
21	.....HA1502		148	215	30000	▲10200	10.00/20	12.00/20‡	Wau 6MZA	6-4¼x4¾	404	5.6	290	130-3000	7-2⅝x12½	Y	Fu 5A43♣	15	Own 1435W	CD	R6.70-10.8	T	FD900DPA	Ws4IA	640	1044	A	JX	67	9x3¼x¼	A
22	.....HA1802		148	215	36000	▲11800	11.00/22	12.00/24	Wau 6SRKR	6-4⅝x5½	517.5	5.8	369	125-2250	7-3x13¾	Y	Fu 5A62♣	15	Own 1445W	CD	R6.70-10.8	T	FE900DPA	Ws4IA	680	1082	A	JX	67	9¼x3⅝x3⅝	A
23	.....HA1803		148	215	36000	▲12100	11.00/22	11.00/24	Wau 6SRKR	6-4⅝x5½	517.5	5.8	369	125-2250	7-3x13¾	Y	Fu 5A62♣	15	Own 139W	CD	R6 70-10.8	T	FE900DPA	Ws4IA	680	1082	A	JX	67	9¼x3⅝x3⅝	A
24	.....HA1813		148	215	36000	▲12450	11.00/22	12.00/24	Wau 6SRKR	6-4⅝x5½	517.5	5.8	369	125-2250	7-3x13¾	Y	Fu 5A62♣	15	Own 155W	CD	R4.70-10.8	T	FE900DPA	Ws4IA	680	1082	A	JX	67	9¼x3⅝x3⅝	A
25	.....HB2002		143	211	40000	▲12850	11.00/24	12.00/24	Wau 140GKB	6-4½x5½	525.6	4.425	172-2700	7-3¼x15½		Y	Fu 5A62♣	15	Own 160W	CD	R5.56-9.26	T	FE900DPA	Ws4IA	680	1082	A	JX	67	9¼x3⅝x3⅝	A
26	(D)...HB2002D		153	211	40000	▲14100	11.00/24	12.00/24	Cum HBD600	6-4⅞x6	672.17	495	150-1800	7-4½x13½		Y	Fu 4A86††	12	Own 160W	CD	R7.31-12.4	T	FE900DPA	Ws4IA	680	1082	A	JX	77	9¼x3⅝x3⅝	A
27	.....HB2003		143	211	40000	▲13150	11.00/24	12.00/24	Wau 140GKB	6-4½x5½	525.6	4.425	172-2700	7-3¼x15½		Y	Fu 5A62♣	15	Own 155W	CD	R5.56-9.26	T	FE900DPA	Ws4IA	680	1082	A	JX	67	9¼x3⅝x3⅝	A
28	(D)...HB2003D		153	211	40000	▲14400	11.00/24	12.00/24	Cum HBD600	6-4⅞x6	672.17	495	150-1800	7-4½x13½		Y	Fu 4A86††	12	Own 155W	CD	R7.31-12.4	T	FE900DPA	Ws4IA	680	1082	A	JX	77	9¼x3⅝x3⅝	A
29	.....HB2013		143	211	40000	▲13400	11.00/24	12.00/24	Wau 140GKB	6-4½x5½	525.6	4.425	172-2700	7-3¼x15½		Y	Fu 5A62♣	15	Own 155W	CD	R5.56-9.26	T	FE900DPA	Ws4IA	680	1082	A	JX	67	9¼x3⅝x3⅝	A
30	(D)...HB2013D		153	211	40000	▲14650	11.00/24	12.00/24	Cum HBD600	6-4⅞x6	672.17	495	150-1800	7-4½x13½		Y	Fu 4A86††	12	Own 155W	CD	R7.31-12.4	T	FE900DPA	Ws4IA	680	1082	A	JX	77	9¼x3⅝x3⅝	A
31	(D)...HB2503D		153	211	50000	▲15850	12.00/24†	14.00/24▼	Cum HBD600	6-4⅞x6	672.17	495	150-1800	7-4½x13½		Y	Fu 4A86††	12	Own 177W	CD	R7.31-12.4	Tim	27462W	Ws4IA	780	1212	A	JX	77	9¼x3⅝x3⅝	AL
32	.....▼▼HB2516		168	231	50000	▲15500	11.00/20	11.00/24	Wau 140GK▼▼	6-4½x5½	525.6	4.425	142-2250	7-3¼x15½		Y	Fu5A62-3A65	15	Own 196W	CD	R6.04-7.31	T	FE900DPA	Ws6IA	1054	1782	A	TX†	92	9¼x3⅝x3⅝	A
33	.....▼▼HB2756		168	231	55000	▲16750	11.00/24	12.00 24	Wau 140GKB▼▼	6-4½x5½	525.6	4.425	172-2700	7-3¼x15½		Y	Fu5A62-3A65	15	Own 230W	CD	R6 04-7.31	Tim	27462W	Ws6IA	1280	1988	A	TX†	92	9¼x3⅝x3⅝	A
34	(D)...HB3006D		168	231	60000	▲20000	11.00/24	12.00,24	Cum HBD600	6-4⅞x6	672.17	495	150-1800	7-4½x13½		Y	Fu4A86-3A92	12	Own 320W	CD	R10 4-13 2	Tim	27462W	Ws6IA	1280	1988	A	JX	92	9¼x3⅝x3⅝	A
35	(D)...HB3506D		181	192	70000	▲23750	12.00/24†	13.00,24▼	Cum HBD600	6-4⅞x6	672.17	495	150-1800	7-4½x13½		Y	Fu4A86-3A92	12	Own 330W	CD	R10 4-13 2	Tim	27462W	Ws6IA	1280	1988	A	JX	98	11¼x3⅝x3⅝	AL
36	(D)...HB4506D		181	192	90000	▲27300	14.00/24▼	14.00/24▼	Cu NHBD600	6-5½x6	743.15	537	200-2100	7-4½x13½		Y	F4A112-3A92	12	Owe 340W	CD	R** -11.59	Shw	FE18A34	Ws6IA	1235	1988	A	JX	98	11¼x3⅝x3⅝	AL
37	(D)....8F6506D		190	190	130000	▲44500	16.00/24■	16.00/24	Bu 8DA1125	8-5¼x6½	●	13.855	287-2100	9-3¾x21½		Y	F4A112-3A92	12	Own 500W	CD	R** -14.88	Tim	FU900P	Ws6IA	2066	2748	A	JX	140	15x18¼x3⅝	AL
38	(D)....8F7506D		190	190	150000	▲46500	18.00/24●	18.00,24●	Bu 8DA81125	8-5¼x6½	●	13	980	350-2100	9-3¾x21½	Y	F4A112-3A92	12	Own 500W	CD	R** -14.88	Tim	FU900P	Ws6IA	2066	2748	A	JX	140	15x18¼x3⅝	AL
39	.....HB1204		127	162	24000	▲10350	9.00/20	10.00,20	Wau 6MZA	6-4¼x4¾	404	5.6	290	130-3000	7-2⅝x12½	Y	Fu 5A43‡‡	10	T 72503DPH	2F	H6 49-9.35	Tim	F2090H	T4IHV	446	768	A	TX‡	67	9x3¼x¼	A
40	.....HA1304		160	178	26000	▲11000	10.00/20	11.00/20	Wau 6SRKR	6-4⅝x5½	517.5	5.8	369	125-2250	7-3x13¾	Y	Fu 5A62♣♣	10	T 72303DPH	2F	H6 49-9.33	Tim	F2090H	T4IHV	446	768	A	TX‡	76	9x3¼x¼	A
41	.....HB1604		152	163	32000	▲12225	11.00/20	11.00,24	Wau 140GK	6-4½x5½	525.6	4.425	142-2250	7-3¼x15½		Y	Fu 5A62♣♣	10	Tim 1357W	2F	H6 65-8.60	Tim	F3110W	Ws4IA	644	984	A	TX‡	87	9¼x3⅝x3⅝	A
42	.....▼▼HB1904		152	163	38000	▲14925	12.00/20	12.00/24	Wau 145GK	6-5¼x6	779	6.2	585	186-2000	7-3½x18	Y	Fu 4A86♣♣	8	Tim 1758W	2F	H7.33-10 2	Tim	F409CW	Ws4IA	644	984	A	TX‡	87	9¼x3⅝x3⅝	A
43	.....HB2254		152	163	44000	▲16350	12.00/20	13.00/24	Wau 145GKB	6-5¼x6	779	6.2	595	222-2100	7-3½x18	Y	Fu 4A86♣♣	8	Tim 79721W	2F	H7.66-10 2	Tim	F409CW	Ws4IA	684	1032	A	TX‡	87	9¼x3⅝x3⅝	A
44	(D) ...HB2254D		159	170	44000	▲16625	12.00/20	13.00/24	Cu NHBD600	6-5¼x6	743.15	537	200-2100	7-4½x13½		Y	Fu 4A86♣♣	8	Tim 79721W	2F	H7.66-10.2	Tim	F409CW	Ws4IA	684	1032	A	TX‡	87	9¼x3⅝x3⅝	A

†—Rear only; Front 11.00/24.
‡—Rear only; Front 11.00/22.
♣—Own EJ three speed auxiliary transmission furnished.
§—Timken T70 two speed torque divider furnished.

♦—Parking brake at rear of auxiliary transmission.
▼—Rear only; Front 12.00/24.
■—Rear only; Front 14.00/24.
•—Rear only; Front 16 00/24.
●—1125 cu. in.

††—Own model FJ three speed auxiliary transmission furnished.
‡‡—Timken T76 two speed transfer case furnished.
♣♣—Timken T77 two speed transfer case furnished.

‡—Parking brake at rear of transfer case.
▲—Includes cab.
▼▼—Also available with Cummins Diesel engine and appropriate transmission.

MACK TRUCKS... for All-Out Effort

● Today's all-out effort in National Defense and civilian supply places an ever-increasing strain on truck equipment. Fact is, up to 75% of all incoming and outgoing materials at the nation's defense plants are now hauled on motor trucks.

Under such emergency conditions "Built Like A Mack" takes on added significance . . . means trucks that stand up better under the punishing wear and tear of bigger loads and more intensive service.

Wherever they operate . . . in whatever phase of the national economy . . . Mack trucks have one thing in common. Being Macks—they're built to outlast them all—to give *long-lasting* economy and reliability. That's a basic Mack advantage, vitally important during periods of uncertainty when replacements may be difficult to obtain.

Your nearest Mack branch or distributor has the right Mack for your particular line of business—a truck that's built better to give you benefits in low-cost maintenance and peak performance for many years to come.

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. . . outlast them all

Mack Trucks, Empire State Bldg., New York 1, New York. Factories at Allentown, Pa.; Plainfield, N. J.; Long Island City, N. Y. Factory branches and distributors in all principal cities for service and parts. In Canada: Mack Trucks of Canada, Ltd.

Over-the-road transport of essential materials is one more job where Mack trucks show at their best in extra strength and stamina, extra performance and extra dependability.

New Truck Registrations by Makes by States*

STATE		Auto-car	Brock-way	Chev-rolet	Dia-mond T	Divco	Dodge	Fed-eral	Ford	FWD	GMC	Inter-na-tional	Ken-worth	Mack	Peter-bilt	Reo	Ster-ling	Stude-baker	White	Willys	All Others	Total
Alabama	Feb.			629		6	138		375		177	90		14		2		50	20	27	2	1,530
	2 Mos.			1376	2	6	359	1	853		375	242		33		6		143	44	67	7	3,574
Arizona	Feb.	2		138	1		59		1 0		58	37		2	3			11	3	9	1	434
	2 Mos.	2		291	2	1	143		2 8		114	80	1	5	3			37	7	22	4	930
Arkansas	Feb.			5'4			129		4 8		199	141		1				69	8	44	1	1,524
	2 Mos.			14'0	3		349		10C8		498	294		2		6		165	19	82	3	3,839
California	Feb.	11	1	1750	18	64	9 0	1	1452	11	719	383	27	32	18	20	3	206	46	134	9	5,815
	2 Mos.	33	2	3789	55	133	667	2	2946	17	1536	798	49	76	35	30	25	510	98	286	25	12,132
Colorado	Feb.			344	4	6	95		247		126	100	4	6		6		30	2	39	1	1,010
	2 Mos.	1		754	6	11	227	1	553		231	2 8	5	14		14		71	8	85	2	2,201
Connecticut	Feb.	4	3	162	11	7	61	1	108		42	57		50		6		14	9	33	4	572
	2 Mos.	7	6	369	22	23	168	4	238		97	112		69		11		32	18	53	9	1,236
Delaware	Feb.		1	76			36		65	1	14	27		3		1		9	4			237
	2 Mos.	1	1	184	1		70		149	1	43	48		3		3		19	6	4	4	537
Dist. of Columbia	Feb.	1		71	1		14		51		25	21		1		1		1	1	1		189
	2 Mos.	1	1	227	5	3	40		91		66	70		6		2		2	3	8	1	526
Florida	Feb.			536	4	10	303		370		119	137		37		31		90	23	67	16	1,743
	2 Mos.	6		1143	21	19	591		8 2	1	284	269		65		48		196	48	181	24	3,706
Georgia	Feb.			983	5	4	173	2	644		177	139		20		2		120	17	45	12	2,343
	2 Mos.		1	1988	6	6	509	3	1591		431	364		48		17		288	36	98	16	5,400
Idaho	Feb.			164	3	2	57	2	124		83	58	6	7		1		28	3	42		580
	2 Mos.			272	4	3	121	2	240		171	102	10	9		3		52	9	75		1,073
Illinois	Feb.	6		1337	68	25	571	5	1042	1	385	564		62		10	2	101	54	55	11	4,299
	2 Mos.	7	2	2290	121	49	1045	6	1782	3	665	885		82		26	2	187	99	125	18	7,394
Indiana	Feb.	1		742	8	11	235	5	594		157	378		16		12		111	68	56	1	2,395
	2 Mos.	1		1502	18	12	582	6	1148		312	668		30		24		230	124	99	5	4,739
Iowa	Feb.			559	9	2	133	1	349		105	195		5		2		45	16	19		1,440
	2 Mos.	1		1191	17	13	347	1	854		282	485		20		5		110	29	45	2	3,372
Kansas	Feb.			545	1		121	2	364		148	196		2		5		34	5	33		1,456
	2 Mos.			1022	2		251	3	673		275	348		2		8		81	17	66	1	2,749
Kentucky	Feb.			580	5	4	125	2	335		148	135		14		3		40	13	68	6	1,478
	2 Mos.	1		1229	9	4	287	3	707		336	327		20		7		105	20	128	9	3,192
Louisiana	Feb.			828	15	5	171		681	4	323	190		6		2		105	10	53	3	2,393
	2 Mos.	1		1109	19	5	233		961	5	413	257		8		2		144	15	73	3	3,263
Maine	Feb.		2	148		1	25	2	82		38	40		7				10	6	24		385
	2 Mos.	2	4	331	1	1	83	2	210		103	102		28				26	15	35	2	945
Maryland	Feb.	1	4	283	2	5	93	7	163		75	92		21		4		14	7	11		782
	2 Mos.	4	16	573	2	6	226	14	361		176	185		36		14		34	11	27		1,685
Massachusetts	Feb.	26	13	315	12	10	126	4	248		72	95		37		8	1	18	24	14	2	1,023
	2 Mos.	39	29	685	25	26	286	15	505		176	212		71		28	7	50	60	44	4	2,242
Michigan	Feb.	4		1004	10	22	289	3	972		264	215		15		27		49	22	28	2	2,926
	2 Mos.	13		2312	16	28	700	13	2199		529	521		39		64		112	81	80	7	6,7.4
Minnesota	Feb.			807	3	1	217		444	4	153	172		8				76	18	35	1	1,739
	2 Mos.			1011	9	8	408		780	6	307	404		12		4		123	21	76	4	3,173
Mississippi	Feb.			511			110		349		187	118		7		1		33	6	77	1	1,400
	2 Mos.			1098	1		278		803		397	253		21		1		93	14	119	2	3,080
Missouri	Feb.			1097	4	21	311		744		344	234		8		5		81	58	41	1	2,949
	2 Mos.			2.55	12	29	693		1443		672	485		13		10		175	105	89	5	5,886
Montana	Feb.			197	3		57		108		71	72	2	2		3		26	7	41		589
	2 Mos.			364	8		100		188		126	129	3	4		5		52	8	99		1,076
Nebraska	Feb.			497	18	1	114		380		138	177	6	14		3		45	12	36	1	1,442
	2 Mos.			1051	30	2	223		687	1	283	371	9	20		6		109	16	81	1	2,884
Nevada	Feb.			41			18		18		45	9						3		7		141
	2 Mos.			92	1		44		53	1	85	33						8		17		334
New Hampshire	Feb.		3	119	1	1	34	1	63		35	28		13		6		9	1	17	1	332
	2 Mos.	2	4	193	1	2	76	1	127		65	55		23		7		18	2	28	2	604
New Jersey	Feb.	12	57	868	13	17	145	6	382		135	160		44		16	4	23	26	42	4	1,754
	2 Mos.	35	106	1348	26	66	468	21	778		334	3.9		97		24	5	72	74	111	8	3,890
New Mexico	Feb.			259	1		68		148	2	100	37		1		1		42	3	27	2	691
	2 Mos.			488	1		120		272	2	180	71	2	2		1		73	3	41	3	1,239
New York	Feb.	25	88	1016	73	29	478	22	637	9	302	381		125		64	1	76	90	115	43	3,574
	2 Mos.	76	185	2833	156	75	1293	41	1550	15	797	882		343		146	8	202	278	300	76	9,026
North Carolina	Feb.	10	3	807	1	7	136	2	448	1	281	195		66		5		76	28	44	22	2,132
	2 Mos.	19	4	1784	3	11	398	2	1139	1	548	446		132		13		208	65	86	48	4,907
North Dakota	Feb.			171	1		50	3	131		36	65				1		22		21	1	502
	2 Mos.			3 8	3	1	112	4	248		77	154				2		49		40	2	1,006
Ohio	Feb.	16	1	1283	21	39	342	5	864	2	270	433		55		31		101	137	97	11	3,738
	2 Mos.	29	4	2884	44	72	909	17	1911	3	633	984		96		61		233	299	207	40	8,426
Oklahoma	Feb.			698	2	3	211	1	538	6	167	197	2	1		6		52	18	37	3	1,940
	2 Mos.			1188	2	6	337	1	832	16	287	325	4	4		11		87	33	65	4	3,202
Oregon	Feb.			321			93	1	175		103	9,	9	18	3	1	1	25	13	41	3	838
	2 Mos.			499	2	1	203	2	316		186	140	10	29	5	1	1	45	22	85	7	1,554
Pennsylvania	Feb.	13	53	1098	24	5	588	10	1031		343	525		123		19		107	73	80	14	4,106
	2 Mos.	24	118	2109	52	17	1231	18	1774		669	968		233		43	7	209	161	193	23	7,849
Rhode Island	Feb.	1		70	3	4	35		75		23	44		5				3	5	4		272
	2 Mos.	5	3	166	6	8	77		148		41	79		11		1		12	12	13	3	585
South Carolina	Feb.	3		357			89		233		75	78		9				39	13	9	1	908
	2 Mos.	5		912			238		557		217	174		24				90	26	22	7	2,272
South Dakota	Feb.			147	2		79		116		57	101				1		19		20		542
	2 Mos.			333	3	2	157		239		112	217				2		63	3	63		1,194
Tennessee	Feb.			472		3	134		278		114	88		16		1		20	21	25	1	1,173
	2 Mos.			1406	1	11	444	5	835		415	271		45		5		101	41	65	5	3,650
Texas	Feb.	5		2549	13	12	720	4	1702		957	535		38		27		248	79	143	10	7,040
	2 Mos.	9		5831	31	33	1720	5	4236		2207	1143		69		37		647	166	355	16	16,505
Utah	Feb.			152	2	7	35	1	81		54	47	2	4	1	1		5	4	12	4	412
	2 Mos.			309	2	19	59	1	188		118	94	6	8	3	2		18	13	25	4	869
Vermont	Feb.			52	1		16		31	1	17	21		7		2		7		15		170
	2 Mos.			113	2		37	1	72	1	28	49		16		5		12		30	1	367
Virginia	Feb.	6	5	704	3	1	185	2	403		124	181		43		3		44	22	68	8	1,807
	2 Mos.	9	9	1357	4	6	389	4	836		287	341		74		9		98	49	112	9	3,593
Washington	Feb.			384	4	3	153		224		107	97	18	9		11	3	35	6	43	36	1,133
	2 Mos.			676	9	15	322		442		226	2 5	51	16	1	13	4	75	25	91	47	2,228
West Virginia	Feb.			254	2	2	102		192	2	70	66		16		2		29	7	67	1	812
	2 Mos.		6	578	4	6	240	5	391	2	194	146		27		7		63	24	151	3	1,847
Wisconsin	Feb.			485	2	6	164	5	365	6	127	177		8		8	1	42	14	33	6	1,428
	2 Mos.	3		966	8	15	396	8	785	13	287	392		18		24	2	93	49	83	13	3,155
Wyoming	Feb.			149	5		24		69		52	42		1		2		13	4	40		401
	2 Mos.			300	8		66		173		94	85		5		2		34	9	69		844
Total	February, 1951	147	234	26853	379	346	8572	100	90 7	50	7941	7691	76	1001	25	363	16	2459	1026	2039	245	78,581
Total	February, 1950	128	141	24629	370	242	7236	83	9768	24	5767	6510	18	708		222	20	3502	681	1340	309	71,698
Total	2 Months, 1951	336	501	56167	786	754	19302	212	399 6	88	6908	5812	150	2008	47	760	61	5654	2303	4396	490	166,639
Total	2 Months, 1950	241	295	47392	781	511	15541	184	37524	64	10834	2393	50	1529		480	43	6999	1314	2775	673	139,623

* Data from R. L. Polk & Co.

Get the Facts On FEDERAL TRUCKS

Over 100 Money-Saving Features!

Before you buy *any* truck, get the facts on FEDERAL! Cash in on the greatest truck news in over 25 years! See it and you'll agree, the new Federal *Style-Liner* brings you everything you ever wanted in a truck—top-flight payload performance . . . economical power . . . all-truck strength and durability . . . time-saving accessibility—PLUS Federal's famous million-dollar cab!

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New, Swing Lift Fenders provide full accessibility to engine • One Piece Curved Safety Plate Glass Windshield • Longer, Easier Riding Springs • Powerful 7-Main Bearing Crankshaft heavy duty, all-truck Engines • Positive Crankshaft Ventilation • Hypoid Rear Axle • Radius Rod Drive • Built-in Slip Free Running Boards • Double Cowl Ventilators • Accessible, Hinged, Wiring Panel • All-Weather Air-Conditioning • AND MANY MORE ALL-TRUCK FEATURES.

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FEDERAL MOTOR TRUCK COMPANY • DETROIT 9, MICH., U.S.A.
Sales Division

Please send me without cost or obligation illustrated literature featuring the new Federal *Style-Liner* model trucks.

What is your trucking application?_____

Name_____

Address_____

City_____ Zone_____ State_____

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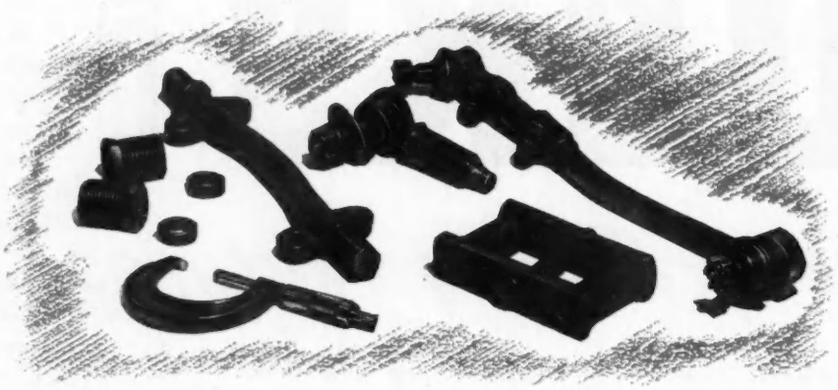
. . . ALEX. K. SCHERER, Ottawa, Ill., as vice president of American Trucking Associations.

. . . W. W. WARREN, as president of United Van Lines, Inc., St. Louis, Mo.



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YOU save time in installation with Monmouth Chassis Parts. They are machined to close tolerances from correct analysis steel and heat treated to meet original equipment specifications.

The line is complete. It includes king bolt sets, shackles, tie rod ends and drag links, tie rod and drag link assemblies, knee-action coil springs, and independent front wheel suspension parts.

N. A. P. A. Jobbers coast to coast give Minute-Man service on the Monmouth line.

Bearings

King Bolts

Clutch Plates and Parts

FREE FRONT END CHART
Wall size. Data on all popular cars.

Name_____

Street_____

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Write to

THE CLEVELAND GRAPHITE BRONZE CO.
REPLACEMENT SALES DIVISION
6545 Carnegie Ave. • Cleveland 3, Ohio

. . . KENNETH L. VORE, who will succeed E. G. Plowman as director of the military traffic service in the Office of Secretary of Defense.

. . . CHRISTIAN B. CALDWELL, consultant on taxicabs and other for-hire urban personnel transport motor vehicles for the street and highway transport division of the Defense Transportation Administration.

. . . WILLIAM B. LAWRENCE, named general manager of the Cummins Diesel Sales Corp., Cleveland, Ohio.

. . COOKE BAUSMAN, JR., as manager of the sales department, Koppers Co., Inc., Pittsburgh, Pa.

. . . MAX EISENBERG, as representative for Mississippi, Alabama, Tennessee and the Carolinas for South Gate Brake Specialties Co., South Gate, Calif.

. . . MELVIN L. HURR, manager of factory personnel at General Tire & Rubber Co., Akron, Ohio.

. . . MARTIN KELLY, director of industrial relations at Continental Motors, Muskegon, Mich., as a vice president of the corporation.

. . . C. EDGAR SMITH, executive vice president of Towmotor Corp., Cleveland, has been elected president.

. . C. I. OCHS, as Chairman of the board of directors, Eaton Mfg. Co., Glenville, Ohio.

. . ROBERT CASS, assistant general sales manager of the coach division of White Motor Co., who is now chief of the automotive branch of the transportation equipment division of NPA.

. . . H. J. MCGINN, as president of Eaton Mfg. Co., Glenville, Ohio.

. . . L. F. DESMOND, director of advertising and merchandising of Dodge Div., Chrysler Corp., Detroit.

. . . SEWARD T. SALVAGE, advertising manager of Timken Roller Bearing Co., Canton, Ohio.

. . . District sales managers for Fruehauf Trailer Co., Detroit, include DEXTER B. WALKER, Detroit; FRED S. NEUMANN, Columbus, Ohio; and A. E. WATSON, Kansas City, Mo.

. . . PAUL REEVES, as director of sales of Timken Roller Bearing Co., Canton, Ohio.

(TURN TO PAGE 116, PLEASE)

STANDARD ENGINEER'S REPORT

DATA

LUBRICANT RPM Gear Lubricant (Compounded)

UNIT 13 "Semi" trucks

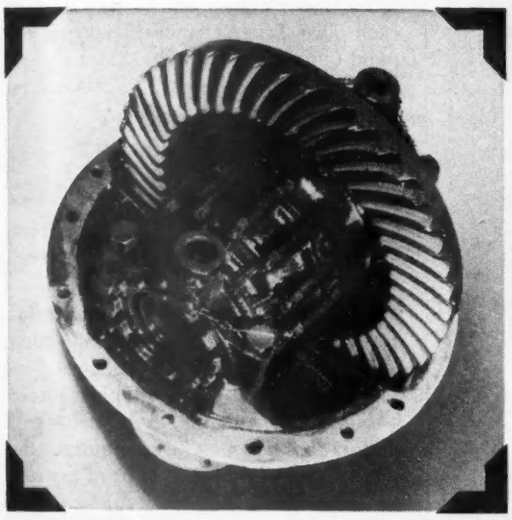
PART Transmissions & differentials

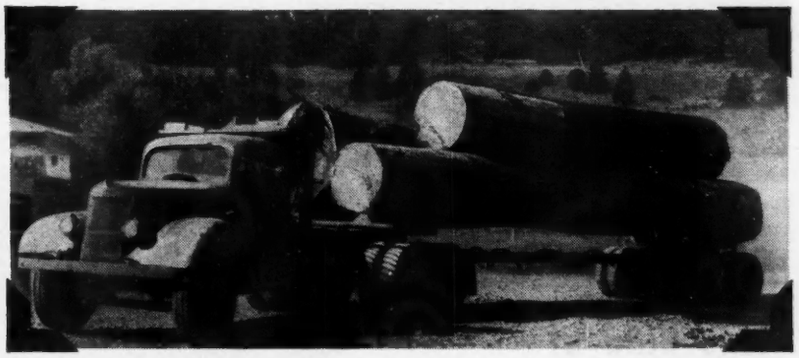
CONDITIONS Hauling out of woods (mostly low gears)

LOCATION Eugene, Oregon

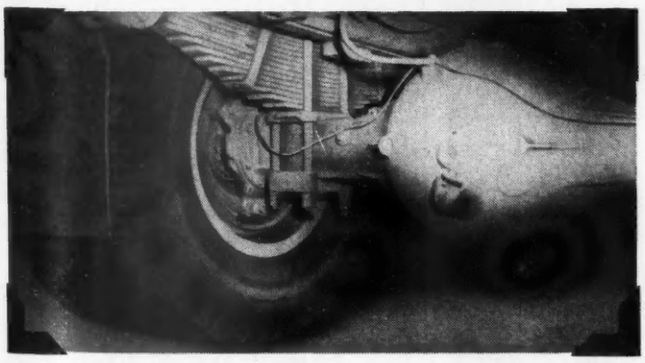
FIRM H.B.&M. Trucking Co.

Gears show little wear after year in logging service!





IN A LOGGING TRUCK DIFFERENTIAL lubricated with RPM Gear Lubricant (Compounded), the gear unit at left is one of 13 that worked for a year in trucks pulling loads up to 36 tons out of the woods. All the operation was off the highway on soft and often steep temporary roads where lowest gears were required. No gear trouble of any kind was encountered during the year. This unit was pulled to replace a seal.



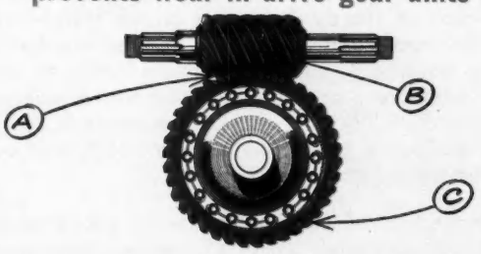
REAR AXLES of these tractor and trailer outfits carry a load most of the time. It is only a short haul from the woods to the mill so a truck can deliver as many as six loads a day.

REMARKS: High oiliness qualities in RPM Gear Lubricant (Compounded) provide extra gear tooth protection in most abnormal operating conditions. Its lubricating qualities and stability make it an excellent lubricant for bronze worm gears. (For hypoids, RPM Multi-Service Gear Lubricant is recommended.)

RPM

TRADEMARK "RPM" REG U.S. PAT. OFF.

How RPM Gear Lubricant (Compounded) prevents wear in drive gear units



A. Made from paraffin stocks with special compounds that help provide a tough film—gives extra tooth protection, withstands shock and overloads.

B. Has high resistance to oxidation as well as deposit formation—assures lubrication in high temperatures.

C. Contains foam inhibitor—prevents high gear-case pressures.

FOR MORE INFORMATION about this or other petroleum products of any kind, or the name of your nearest distributor handling them, write or call any of the companies listed below.

STANDARD OIL COMPANY OF CALIFORNIA • San Francisco
THE CALIFORNIA OIL COMPANY • Barber, N.J., Chicago, New Orleans
STANDARD OIL COMPANY OF TEXAS • El Paso, Texas
THE CALIFORNIA COMPANY • Denver, Colorado

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Microfilm Filing System

Continued from Page 72

satisfactory to Adley management and office personnel. In a very short time, the number of multi-tier filing cabinets required just for current operations was reduced from 184 to 18. Added to the dozen-and-a-half regular cabinets, now adequate for current operations, is one small unit to house the compact microfilm rolls.

Now, much of this duplication has been eliminated and, backed by a teletype hook-up, more information is available faster, with a far simpler filing set-up. But more of that later.

Two-Part Procedure

THE microfilming procedure at the Adley offices in New Haven is in two segments. Shipping orders (the drivers' copies) come in in daily batches from each of the origin terminals, along with an invoice copy for each order. The bill duplicate goes to the accounting department proper and the order to the Film-a-Record operators.

Because of the wider spread in the time at which the delivery receipts reach the home office, these are held in the regular current files for a matter of some months, to make certain the numerical sequences are set up before microfilming.

Indexing at the home office is now done entirely by the numerical system. The shipping orders are fed through the camera in correct numerical order. Using film indexing targets, the rolls of film carry identification similar to that of regular movie title panels. These targets, photographed at the start of each new filming operation, give the point-of-origin terminal and the opening and closing order (or delivery receipt) numbers for the day.

Alphabetical filing is maintained only at point-of-origin terminals by shipper, and at destination terminals by consignee. These records bear the invoicing numbers that serve for the numerical filings at the home office.

Should a question arise regarding any of the shipping orders, all the home office or any of the terminals need have at hand to turn up the complete record is the invoice number and date. Or if that is unknown to the inquirer, the name either of the shipper or of the consignee (checked by teletype with the origin or destination terminal) will provide the home office with the number and date, so that the record can be quickly located on the microfilm roll.

The desired information can then be secured by visual reference to the document, enlarged on the viewer. And if a copy of the document is required, this versatile piece of equipment doubles as a printer to produce an inexpensive white-on-black image to the original size, or larger or smaller, as desired.

(TURN TO PAGE 88, PLEASE)

This kind of
HOARDING IS LEGAL!
Here is what was accomplished just by the installation of Handy Governors on the vehicles of 180 truck fleets. The saving on tires was found to be 22.6%, on engine repairs 32%, on fuel 13.5%, on lubricants 26%, on brake maintenance 29.2% and general maintenance 26%. Furthermore it reduced insurance 16% and cut the cost of accidents 37%.
In the face of war shortages which will certainly get progressively worse is there any better way to conserve equipment and at the same time make substantial dollar savings? This kind of hoarding is not only legal but it pays good dividends.
Write for quotation on equipping the vehicles of your fleet with Handy Governors.
KING-SEELEY CORPORATION
ANN ARBOR, MICHIGAN
PLANTS AT
ANN ARBOR, SCIO,
YPSILANTI

"Make mine medium rare!"

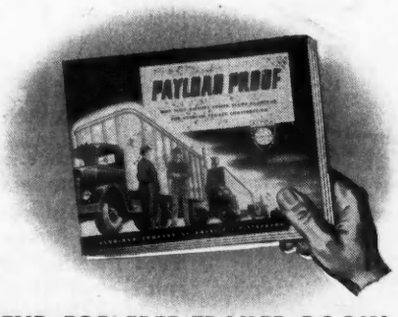
Great Dane reports:

"Alcoa Aluminum is worth its weight in extra payload capacity!"

"Pound for pound, the Alcoa Aluminum we use to build Great Dane semitrailers eliminates at least its equivalent in dead weight. Adds enough payload capacity to make every trip a bonus trip."

That's the word from the Steel Products Co., Savannah, Ga., trailer builders. Their aluminum vans average 2,000 lbs. lighter than their hi-tensile steel vans. Additional weight can be saved with aluminum landing gear, aluminum flooring, and forged aluminum wheels. Great Danes feature cast, heat-treated aluminum roof deflector caps which protect trailer tops from damage by tree limbs and other obstructions.

"Our fleet customers say aluminum Great Danes outlast heavy metal vans . . . can be repaired more quickly and cheaply," adds this builder. More proof that fleets earn more, spend less when they operate Million-Milers of Alcoa Aluminum!



SEND FOR FREE TRAILER BOOK!

Government restrictions now limit the aluminum we can supply for civilian applications. But this 36-page "Payload Proof" book will give you valuable help in your long-range planning for more profitable equipment. Write ALUMINUM COMPANY OF AMERICA, 1876E Gulf Bldg., Pittsburgh 19, Pa.

ALCOA

ALCOA *First in Aluminum*

THE METAL THAT LASTS

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Microfilm Filing

Continued from Page 86

Although the one microfilming camera unit took care of current operations, with occasional overtime, in September last another camera was added to take part of the 30,000-a-week current recording load; and some bites into old records on which ICC permission to microfilm had been received in the meantime.

In summing up the advantages Adley Express management has gained under the new procedure, General Traffic Manager Achorn has this to offer:

"From the clerical workers' standpoint, there is probably no job more tedious than filing tasks such as we had to handle, pre-microfilming. The regular staff members we selected for the new procedure took to the system immediately. After brief on-the-job training, they were able to feed the documents into the recording camera as rapidly as necessary to bring and maintain current operations to a day-to-day basis. And in the time they soon had for other filming activities they got to work on the stacks of old records, which the ICC gave us permission to transcribe onto microfilm.

"All of which means that we have the benefits of better records filed better, and have room enough to move around without bumping into filing cabinets or mountains of papers that are waiting to be filed."

END

Please Resume Reading Page 74

Reference to file data is obtained by use of a viewer, which projects magnified image on screen. Method of indexing is shown on screen at left of correspondence being read by typist

SMART MECHANICS RECOMMEND

2-Way Oil Control

Why control oil just one way when a combination treatment is so easy and effective? First, with *Super Hi-Speed* Combination Sets for badly worn cylinders; second, with Burd Valve Packing to prevent oil loss resulting from worn stems and guides. Put *both* of these Burd products to work for better performance and lower operating costs.

BURD SUPER HI-SPEED PISTON RINGS

Best in the business for correcting oil pumping under tough cylinder conditions. Proper conformance with cylinder walls, maximum wiping action, minimum wear—make these combination sets restore power and compression, positively control oil. Try them!

BURD VALVE PACKING

Best insurance against oil and compression leaks from worn stems and guides. Installed at the top of intake valve guides, Burd Packing keeps *oil* in the guide—*out* of the combustion chamber. Easy to use. Easy to order. Get it from your jobber.

BURD PISTON RING COMPANY • ROCKFORD, ILLINOIS

Ice Cream Body

Continued from Page 71

Painting and Lettering

TYPES of color for equipment of this nature are dictated principally by the product being carried, and to give the impression of cleanliness. Cream and white predominate as the principal color, with a small amount of smartly contrasting trim color to match.

A great deal has been done, particularly on this type of equipment with cast, raised and polished metal letters which give them an air of distinction. For operators who wish lots of extra trim, polished moldings always may be used with striking effects.

END

Please Resume Reading Page 72

DuPont Section to Rent Trucks

Grasselli Chemicals, a department of E. I. duPont de Nemours & Co., has switched from their private fleet to leasing from Willett Co. of Chicago. The Chicago fleet operations of Grasselli Chemicals will be handled by the truck rental roup.

We turn on the searchlight ...you save the money!

You realize immense savings from this FREE tire analysis and report

1. Your U. S. Royal Dealer studies the tires on every piece of equipment you operate.

2. He renders you a clear, written report with specific recommendations (in detail, tire for tire).

3. You get a final cost record system you can depend on (records that can save you big money)!

You, too, save thousands of dollars in *costs per mile*—you will get added *safety* and *efficiency* from this expert diagnosis! You put your tire problems in the hands of responsible, experienced experts. You get a scientific and exact checksheet on every vehicle you operate.

Here's How You Save Money

. . . from this expert, professional tire service!

U.S. ROYAL FLEET SERVICE now gives you this complete control.

1. The right tire for the job—type, size and capacity.
2. Correct inflation pressures established for your vehicles.
3. Rim examination and correction on every wheel.
4. Duals measured and precisely matched.
5. Irregular wear spotted and corrected.
6. Tires pulled for repair or recap, where necessary!
7. Maximum speed and load distributions recommended!

Utmost Quality in All Replacement Material As You Need It

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U.S. ROYAL FLEET SERVICE

U.S. ROYAL TIRES

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Gulf Fuel & Lubricant Tests

Continued from Page 68

and screen from a Chevrolet engine after over 12,000 miles. This engine was operated in stop-and-go driving using a good premium lubricating oil and a commercially available fuel of good quality. It was cleaned and reassembled and after somewhat more than 11,000 miles in the same operation, using the same lubricating oil, but a special fuel of very high stability, it was again disassembled and the pistons and screen were quite clean as illustrated in Fig. 4.

It would appear from the tests that the important factors of the fuel affecting its ability to produce engine deposits of itself is the volatility and the amount of unsaturates present as reflected by the bromine number.

Operating Conditions

HOWEVER, of equal, if not greater importance in determining the amount of deposits to be formed from the fuel, are the operating conditions under which the fuel is used. The FL-2 Engine Test Procedure itself indicates that it is in low temperature operation where fuel is a factor in engine deposits and field service has borne this out. In field service, if the jacket water temperature approaches the average of 90 deg. F., such as is maintained in the FL-2 Test Procedure, the crankcase oil will most certainly be below 155 deg. F. and field experience indicates it is closer to 100 deg. F.-120 deg. F., if not lower. Reference is made to Fig. 4 which shows clean engine parts on a very stable gasoline. In Fig. 5 are shown engine parts after 28,000 miles using this same fuel. From these parts it may be seen that in low temperature operation even a very stable fuel does not guarantee clean engines.

If the oil is not warm enough, water and dilution will remain in the oil. Water, of course, is a big factor in the formation of 'mayonnaise type of sludge found in low temperature operations. In Fig. 6 is shown how dilution affects engine deposits in the FL-2 Test Procedure. As the crankcase oil dilution increases, the engine rating decreases. In obtaining this data the same fuel was used in each engine test. At about the time these data were being obtained, a utility company in Western Pennsylvania was experiencing a heavy varnish condition in their engines. It was known for certain that the fuel being used at the time was a very stable fuel so this varnish formation with the use of a very stable fuel posed quite a problem. It appeared to conflict with previous information and data. However, when samples of the used oil were analyzed, they were found to contain as high as 10 per cent to 20 per cent dilution. When crankcase temperatures were checked, they were found to be approximately 100 deg. F. and in some cases lower during the operating period. Therefore, based on the laboratory data

(TURN TO PAGE 92, PLEASE)

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AEROL LIFT (floor model) holds unit securely even in tilt position.

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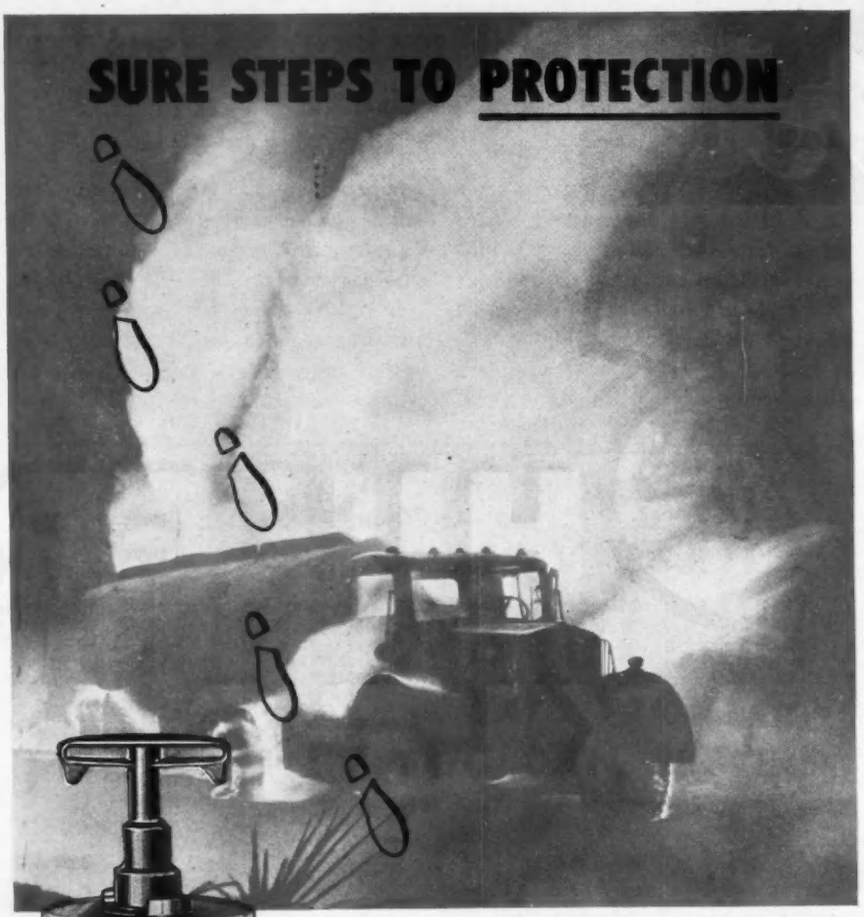

This tank truck burst into flames in Old Augusta, Ind. 5200 gallons of gasoline burned, setting fire to four nearby homes. Loss estimated at $23,100.

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DAYTON 1, OHIO

Lubricant Tests

Continued from Page 90

showing how dilution can affect engine deposits, the reason why this Western Pennsylvania utility fleet was encountering engine varnish was easily answered. There was excessive fuel dilution in the lubricating oil and because the crankcase temperatures were too low, this dilution was not being driven off during the operating period.

Effect of Filters

IT might be interesting at this time to show the effect of filters on engine rating in the CRC FL-2 Procedure. Ordinarily, an oil filter is not used in this test, but in order to determine what effect filters might have in improving engine rating and in what direction improvement was gained, the Gulf Research & Development Co. ran engine tests with and without a by-pass filter, using the same fuel and the same oil. It was difficult from appearance of the pistons and screens to tell which test was run with the filter and which was run without.

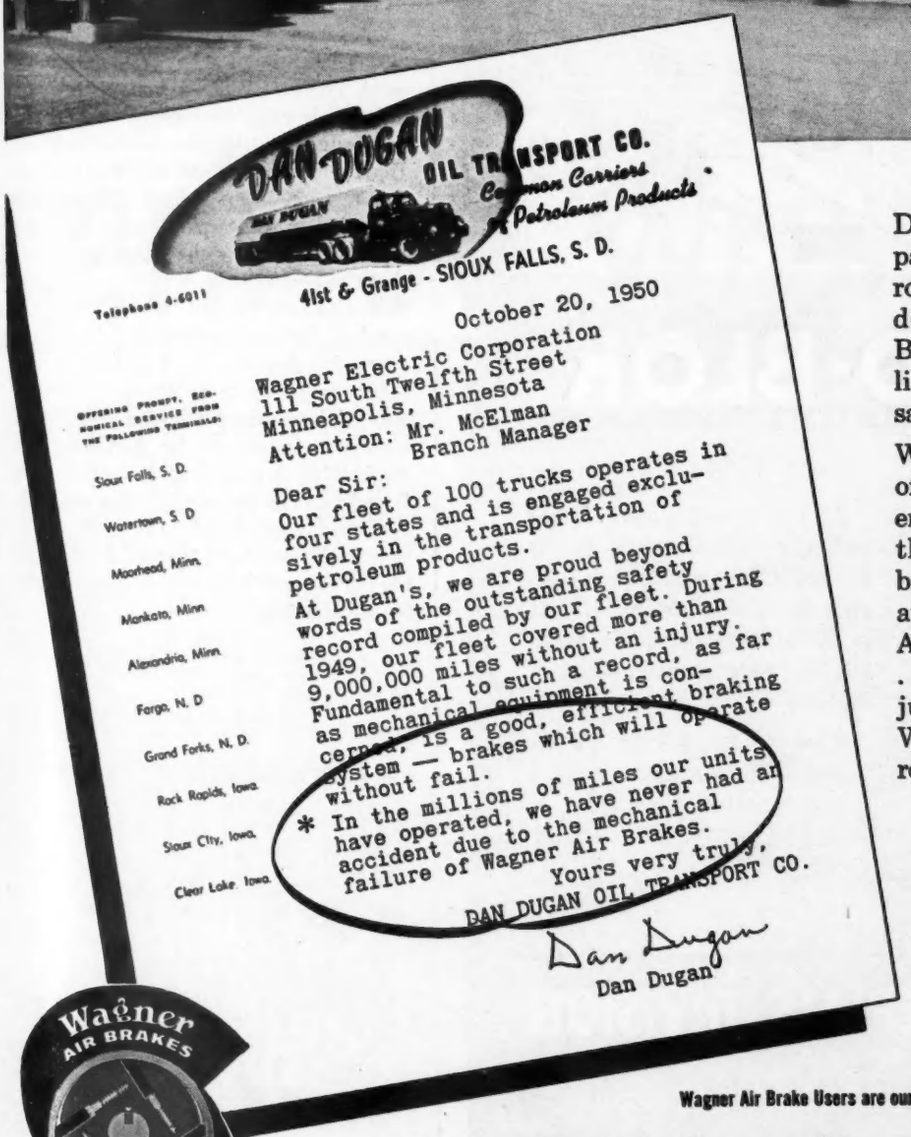
Little or no improvement was effected in oil rings, piston rating, and varnish rating, but considerable improvement was made in the sludge rating. This is interesting information because it is believed that it is the varnish resulting from the oxidized fuel and/or oil present in the lubricating oil, from whatever source, which is mainly responsible for plugged oil rings and clogged oil screens. Sludge, such as is formed in the valve compartment, timing gear housing, and other areas of sluggish or quiescent oil flow, is not believed to be too dangerous in an engine, although it is certainly unpleasant to see.

(TURN TO PAGE 94, PLEASE)

"Don't look now, but I think the back door flew open again."

DAN DUGAN SAYS...

"In the millions of miles our units have operated, we have never had an accident due to the mechanical failure of *Wagner Air Brakes*"



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Branch Manager

Dear Sir:
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At Dugan's, we are proud beyond words of the outstanding safety record compiled by our fleet. During 1949, our fleet covered more than 9,000,000 miles without an injury. Fundamental to such a record, as far as mechanical equipment is concerned, is a good, efficient braking system — brakes which will operate without fail.
* In the millions of miles our units have operated, we have never had an accident due to the mechanical failure of Wagner Air Brakes.
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Dan Dugan Oil Transport Company, like hundreds of over-the-road truckers, have found that the dependability of Wagner Air Brakes have helped them in establishing outstanding records for safety and low brake maintenance.

Wagner Air Brakes are the product of more than twenty years of brake engineering experience gained in the manufacture of hydraulic brakes and brake parts for the automotive industry. The Rotary Air Compressor . . . Power Cluster . . . and other exclusive features are just a few of the reasons why Wagner Air Brakes are nationally recognized as the "best buy."

For real brake economy install Wagner Air Brakes now, or when ordering new vehicles specify Wagner. Get the facts. Write for Bulletin KU-201.

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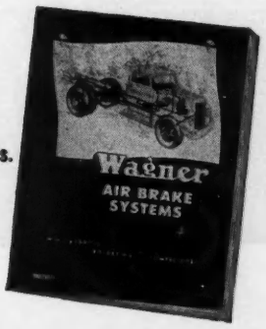

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Lubricant Tests

Continued from Page 92

Chemical Purging

PURGING material will remove engine deposits such as those resulting from cold weather sludge, high temperature sludge, gasoline and lubricating oil. The Gulf product is non-corrosive to any of the materials used in engine construction, including the materials used in alloy type bearings. Used at proper intervals, it keeps rings free, reduces oil consumption, helps maintain compression, and reduces blow-by. It will free valves and hydraulic valve lifters. This material has a Viscosity at 210 deg. F. of 48 sec., which is equivalent to an SAE 20 Motor Oil under the new SAE number classification, and, therefore, will provide good lubrication during the flushing period.

It is primarily a preventive maintenance tool for automotive engines. It is not intended for use in very dirty, badly worn engines which actually require an overhaul, but is recommended for periodic use prior to heavy accumulations of engine deposits.

Use of Additives

IN 1947, Gulf began experimenting with heavy-duty additives in high concentration in the CRC FL-2 Engine Test procedure using dirty fuels. Fig. 7 shows the effect on engine rating of various concentrations in the same base oil of two different heavy-duty additives using a dirty fuel which, with the reference heavy-duty oil in the CRC FL-2 Procedure rated approximately 58 to 60. As the additive concentration increases, the engine rating goes up. With one type of additive the improvement in engine rating is spectacular. With the other, it may be seen that the improvement in engine rating is more gradual.

The curves shown in Fig. 7 indicate that as additional heavy-duty additive is used, engine rating improves considerably with each increment of additive compounded with the lubricating oil. However, in field tests under actual operating conditions where the engines are rated in the same manner as in the laboratory, and by the same personnel, there appears to be a plateau of additive concentration which must be reached before any appreciable effect on engine deposits can be observed. In other words, up to a certain concentration of heavy-duty additive any lesser amount appears to be ineffective in minimizing engine deposits and sludge. Based on field test work, it appears that the concentration of heavy-duty additive in the ordinary type of heavy-duty oil is only mildly effective in this light load operation.

(TURN TO PAGE 98, PLEASE)

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Specify MOLD-BLOK
Many over-the-road haulers are using and liking Mold-Blok Brake Linings. The reason is that Mold-Blok is built to last and to do your job to your complete satisfaction.
Specify Mold-Blok Brake Lining on new outfits or when re-lining older ones. It's a product you can depend upon.
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STANDARD

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Gulf Fuel & Lubricant Tests

Continued from Page 94

Effect of Octane No.

OCTANE number requirement increase was also studied in this fleet test and the information obtained is shown in Fig. 8. Normally, it might be expected that due to the high ash of high additive oils, there would be a tendency towards an increase in combustion chamber deposits which, in turn, would tend to increase the octane requirement of the engine. The data in Fig. 8 show that there is little or no difference between high additive and non-additive oils toward increasing the octane number requirement.

Oil	Octane Number Increase after 30,000 Test Miles (Combustion Chamber clean at start of test)
Napthenic	12.0
Premium	13.5
2-104B or MIL-O-2104	12.0
Supplemental List 1 level	13.1

Fig. 8. Test data show there is little or no difference between high additive and non-additive oils toward increasing octane number requirements

High Additive Oils

IT might also be expected that high ash oils would increase valve deposits and accelerate valve and spark plug failure. In the approximate five million miles run in this particular field test, there was no decrease in valve or spark plug life with the high additive oils. To further check as to whether high additive oils would add to combustion chamber deposits and decrease valve and spark plug life, two such oils with two different additives were used in tire test fleets in Texas. These tire test fleets operate at constant speed under conditions conducive to rapid formation of combustion chamber deposits and short valve and spark plug life. While this type of operation represents a very unusual condition, and one which is not encountered frequently, it was, nevertheless, believed that these oils should be tested under these conditions. After over a million miles in these tire test fleets, the trend has been toward an improvement in valve and spark plug life, and a reduction in combustion chamber deposits, rather than to the contrary as might have been expected. Where an increase in valve life was obtained, it was rather spectacular and where an engine experienced a decrease in valve life with the use of the high additive oils, it has been a small decrease of such little magnitude as to be considered a deviation from the average. The only explanation for the apparent improvement in valve life and combustion chamber deposits is that the metal in the ash from the oil and the lead compounds from the lead-tetraethyl in the fuel have different rates of thermo-expansion and that they perhaps in expansion or contraction slide against each other and sluff off. In any event, it would appear that there is nothing to fear through the use of high additive oils as far as valve life and spark plug life are concerned.

While these various field and laboratory tests on various concentrations of

(TURN TO PAGE 101, PLEASE)

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THE COMPLETE LINE
SAFTEE PRODUCTS
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TWO New EXTENSION MIRRORS for Light Trucks
KD 103
KD 115
KD 103 and KD 115 have wide application on panel and pickup trucks. Combination hinge or panel mounting . . . heavy duty non-slip adjustable hinge bracket. Steel arm with reenforced extension joint extends 9" to 13". Finish black enamel with cadmium plated inner sleeve. Short telescoping mirrors sealed against weather . . . adjustable to any angle.
KD 103 is equipped with KD 105 Round Mirror Head . . . 5" diameter . . . ribbed for strength . . . improved moisture-proof protection.
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KD 113 GMC - Chevrolet . . . with curved bracket to fit late trucks . . . locked in position by friction tension . . . 6" mirror with rubber guard.
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KD 112 Panel or hinge mounting . . . head 4¼" x 8" . . . extension 15" to 27" . . . braced!
KD 101 For panel or pickup truck . . . 5" mirror . . . panel mounting . . . 12" heavy duty reenforced ⅝" diameter tube arm.
KD 108 Extension 15" to 27" . . . panel or hinge mounting . . . 5½" or 6½" mirror.
K-D LAMP COMPANY
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Lubricant Tests

Continued from Page 98

heavy-duty additives were under way, the automotive and oil industries were spurred into the consideration of high additive oils due to the effect of high sulfur diesel fuels in increasing engine deposits and wear. It was found that diesel fuels containing sulfur content of 0.5 per cent to 1.0 per cent increased engine deposits and wear to a considerable extent. The first high additive oil to receive recognition as such by nomenclature was the Caterpillar Tractor Co.'s Series 2 Oil, which required 16 per cent to 25 per cent of heavy-duty additive, depending upon the type of additive used.

An intermediate grade of high additive oil was then proposed and the concentration of heavy duty additive in this type of oil varied from approximately 7 per cent to 10 per cent, again depending on the type of additive used. These two new types of oils were incorporated in the U.S. Army Specification 2-104B as Supplemental List 1 and Supplemental List 2 Oils. These two Supplemental Oils along with U.S. Army Specification 2-104B are now obsolete Army Specifications.

The new specification, MIL-O-2104, specifies that the diesel fuel used in the L-1 Caterpillar Test must have no less than 0.35 per cent sulfur. There have been a number of oils qualified under the old U.S. Army Specification 2-104B which without any additional additive have successfully passed the new MIL-O-2104 specification. In the author's opinion, the old heavy-duty oil was not adequate to take care of cold weather sludge and fuel deposits, and it is his further opinion that there is little reason to believe that the new MIL-O-2104 Oil will do very much better.

One of the most persistent ideas regarding heavy-duty oils regardless of the concentration of additive in the oil is that they will wash or clean deposits already formed in the engine. While it

(TURN TO PAGE 102, PLEASE)

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LIFT THE GIANTS
...with New Zip and Ease!

Fastest seller in its class . . . because it's the only MODERN extra-heavy-duty Jack!

Here's the Jack that's *different* from all others which aim to handle extra-heavy-duty vehicles. *This* super-lift has a top saddle height of 24¼" — *to eliminate blocking.* It is surprisingly easy to maneuver . . . because the one-piece malleable side plates are shaped to create strength *without the handicap of excessive bulk and weight.* And its 7½ tons of authentically-rated power *safely and easily* raise wheel loads of ALL trucks, buses and trailers permitted on the highway. Order an S-15 from your jobber. Put new speed in your shop!

MODEL S-15
7½-Tons
of authentically-rated power

- Manual effort is reduced by the "Feather Touch" principle.
- Jacking action is *fast,* because of "Lightning Lift."
- The LONG handle makes for easy load-spotting.
- Only 324 lbs. of weight! All controls are at the handle top.

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Lubricant Tests

Continued from Page 101

is true that an engine in the laboratory may be operated in such a manner as to purposely form oil deposits and that when this same engine is subsequently operated on a heavy-duty oil the deposits will be all or partially removed, it is the author's experience of never having seen an engine in the field which failed due to heavy-duty oils washing down deposits or causing them to migrate. Many such instances have been reported, but it is believed that if these complaints had been studied thoroughly, some other reason for failure would have been found.

When heavy-duty oils first appeared, most of the experience on them had been laboratory experience, including laboratory engine tests and, as mentioned, in the laboratory heavy-duty oils can be made to clean up engine deposits. However, in field service, it is believed that since these deposits are laid down over a relatively long period of time and since they continue to oxidize even though they have passed from the oil soluble state to the insoluble state and are plated out on engine parts, they become so firmly fastened to the engine and become more and more insoluble the more they oxidize toward complete reduction to carbon, that heavy-duty oils will not cleanse them to any appreciable degree.

It would appear that since the ordinary heavy-duty oil cannot keep fuel deposits from forming in the first place that they would hardly be able to remove them once they have formed. There is some evidence to indicate that slow cleansing of oil oxidation products may be accomplished by heavy-duty oils, but the rate of removal is so slow that no dangerous condition is produced. Gulf has tried without success to make dirty engines fail using heavy duty oils with additive concentrations as high as 50 per cent.

END

Please Resume Reading Page 70

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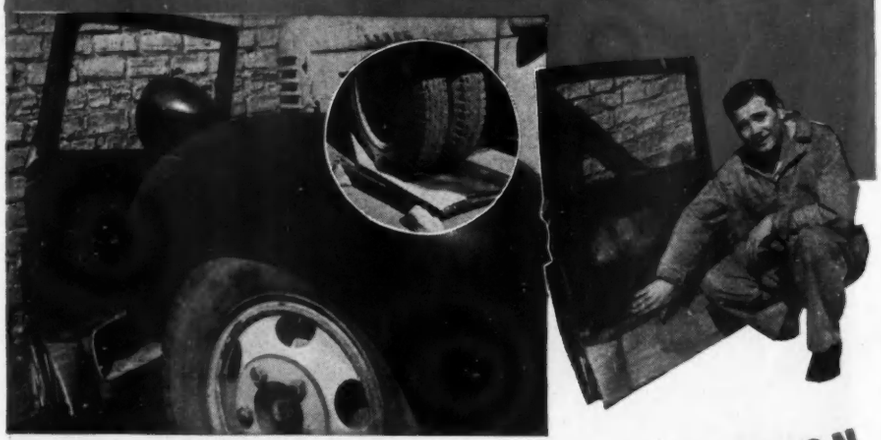

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FIRST we repaired a rusted out and dented door panel with Met-L-it—then we smashed it and rolled over it with a 10-ton truck (inset). As the photos show, Met-L-it and its fiber backing adhered throughout the entire repaired area. *Met-L-it is tough, it's easy to work with, and it takes paint just like any metal.*

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Tire Executive Recommends Drastic Rubber Revaluation

The present supply and demand for rubber indicate that present government allocations of essential civilian rubber are so low that many regard the situation with concern, John L. Collyer, president of B. F. Goodrich Co., stated recently that he viewed the present allocation program as "unrealistic and unwise."

He said, "World rubber supplies in 1951 should be the greatest in history totaling 2,805,000 tons and exceeding 1950 substantially." Mr. Collyer also said that the United States was the largest purchaser of the world's supply of crude rubber and that US produces 95 per cent of the world's synthetic rubber.

Pointing out that rubber is saved only when trucks, tractors, passenger cars and the industrial economy as a whole slowed down, and that restricting the processing of rubber by manufacturers would not attain the same saving, Collyer recommended:

1. An immediate and realistic appraisal of our natural rubber stockpile objective, which seems to be far too high;
2. A moratorium on stockpile buying until such appraisal is completed;
3. A downward adjustment of stockpile objectives in the light of this appraisal;
4. A substantial increase in the total new rubber permitted for monthly industry consumption, and
5. As a safety factor in case of bombing or breakdown, an increase in our nation's synthetic rubber capacity either in existing facilities or by building new plants.

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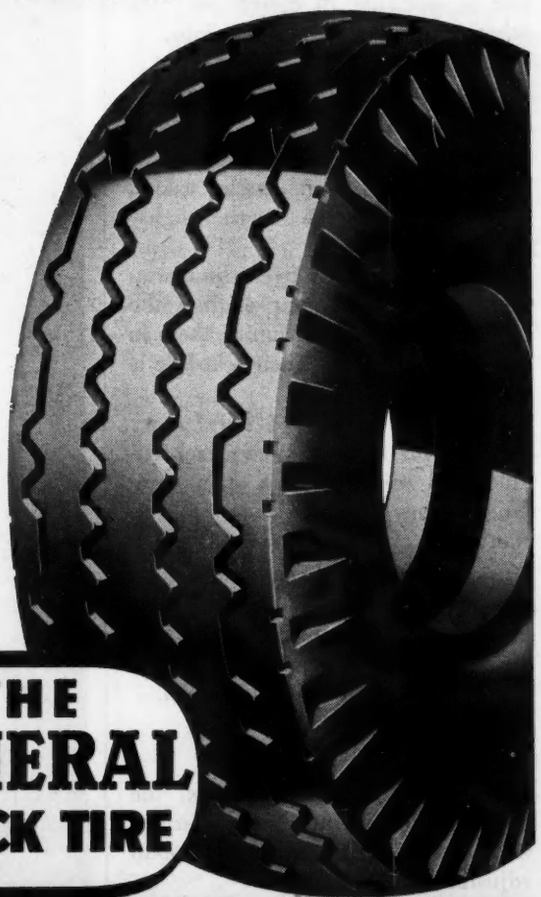

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Five free-rolling ribs distribute the load evenly over all the tread surface. Shoulder vents prevent heat concentration . . . increase flexibility . . . cushion shocks. All these features add up to more original miles.

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Heavy shock absorber plies guard against bruises, blisters and separations. Miles more rayon cord in an extra strong carcass that lasts through extra thousands of recap miles.

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REQUEST GENERAL *TIRES ON YOUR NEW EQUIPMENT*

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Flexible Maintenance Program

Continued from Page 52

The engine to be overhauled is disassembled, and all parts loaded on a special cart. It is wheeled to the cleaning room where the parts are degreased and then steam-cleaned.

Crankshaft, engine block, head and other major parts, next are magnafluxed for cracks. At this stage, the shop foreman determines what units can be replaced on the engine and what units need to be rebuilt. He draws on the parts department for replacement units and consigns those removed to the respective unit overhaul departments.

If it is an overhead valve job, and most of them are, a newly-overhauled head will be issued from stock. If it is a sleeved engine, sleeves complete with fitted pistons, rings and connecting rods and wrist pins, will be issued.

When all components required for rebuilding the engine are assembled, it is turned over to an overhaul specialist. We have two categories here, one a specialist in diesels and the other a specialist in gasoline jobs.

Engines Tested on Dynamometer

THE rebuilding of the engine is a routine job. When completed, it is sent to the dynamometer room, where every engine is thoroughly tested.

We have obtained from the manufacturers of all of our engines the factory procedure in running them in on a dynamometer. Their schedule is followed carefully.

Here is a sample of the factory schedule for testing a new Mack engine, and which we use on our rebuilt engines to bring them up to new standards:

30 min 1000 rpm at one-fourth load or 35 hp.
30 min 1200 rpm at one-fourth load.
30 min 1600 rpm at one-half load.
30 min 2000 rpm at one-half load.
30 min 2000 rpm at full load.
30 min 2000 rpm at full load.

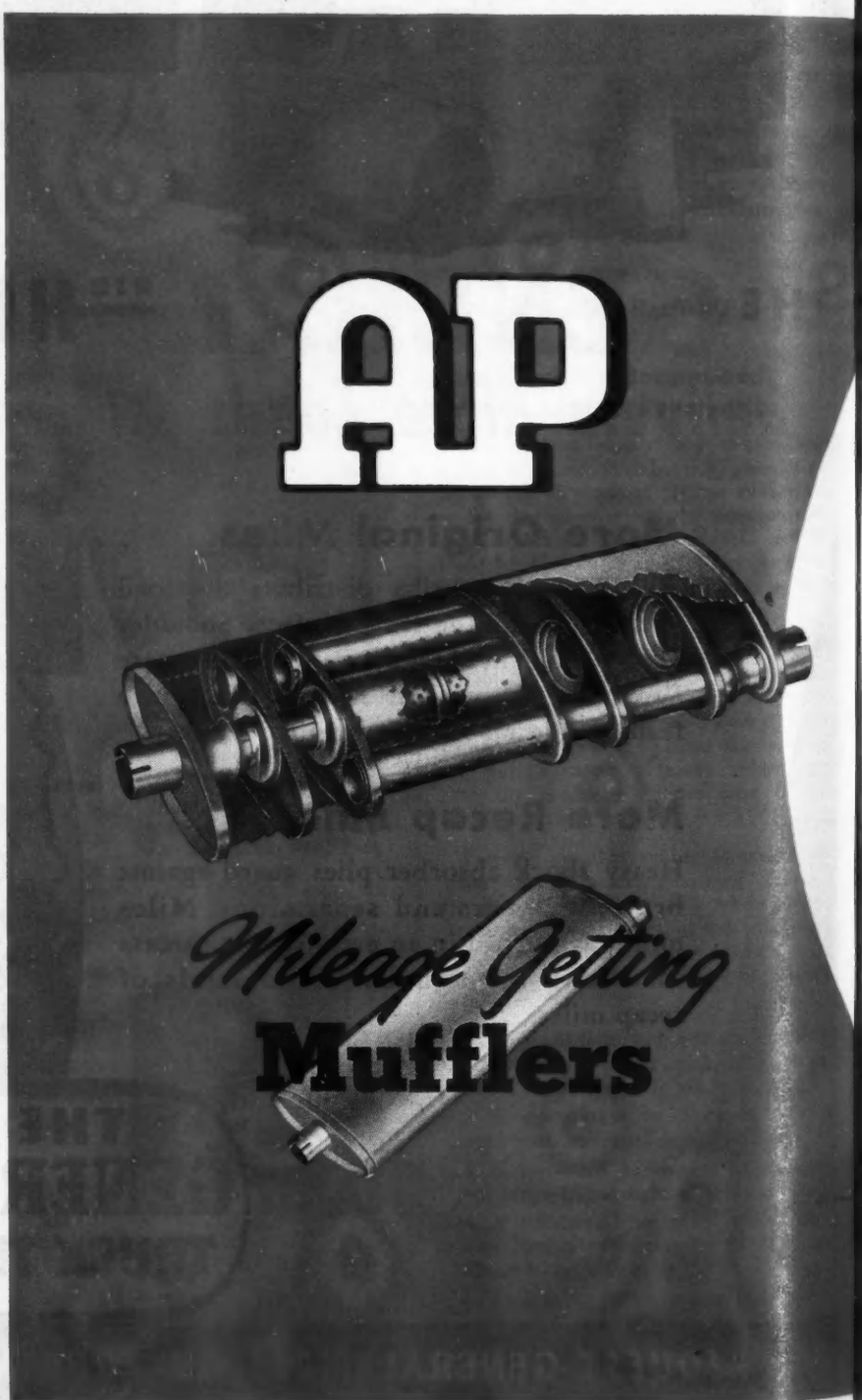
During the last 30 minutes, the dynamometer operator sets governor, valve lash, and makes other tune-up adjustments.

Our exact dynamometer run-in tests and the magnaflux inspections are important factors in keeping these engines out in service instead of back in the shop for something which has been overlooked. We seldom have any returns of any kind after a major overhaul.

Having passed the dynamometer test, the engine is tagged with a two-part tag. One half of the tag is wired to the engine, where it remains until the engine is installed in a bus. The other half goes to the office with all the cost and job tickets, where the cost of overhaul is computed.

When the engine is placed in service, the engine tag and the office half are reunited. The cost of the overhaul then is entered against the bus on its record sheet. Thus, no engine gets into service which has not had its overhaul cost computed and charged.

Our most recent cost records show that a major overhaul on a diesel engine runs an average of $636.50.



while the average for a gasoline engine is $566.29. For this money, we expect the engine to deliver between 125,000 and 150,000 miles.

Special Room for Injector Jobs

WE PLACE a high value on exact science in rebuilding our engines and parts.

For example, we overhaul fuel injectors in a special, pressurized room. This glassed-in shop has a constant air pressure flowing in at the top and out at the bottom, through hinged vents, which precludes the possibility of air-laden dust entering from outside.

The overhauled nozzles are tested in sets of six on a special machine of our own design, which shows the exact amount of fuel being pumped by each nozzle. The pumped fuel is discharged into individual glass graduates under each nozzle. After the test has been run, the contents of each graduate is compared and nozzles showing a difference of a fraction of a milliliter are rejected. These matched sets have much to do with our long engine life and reduction of service calls.

Man-Hour and Cost Data

WE HAVE a total staff of 215 persons, including washers and lubricators. Greasemen are all Class B mechanics. They are instructed to watch for evidences of leaks, frayed wiring, linkage looseness and such.

Total cost of all manpower, including supervisors and common labor, is 5.73 cents per mile. Material and parts cost is 1.24 cents per mile. Overhead, which includes heat, light, power and similar items, is 1.03 cents per mile. This brings our total mileage cost to 8 cents.

Our man-hour figures, at present, are 35½ per 1000 miles.

105 Engine Overhauls Next Year

OUR engine overhauls next year will number about 105. Knowing the mileage gives us an opportunity to plan ahead.

Our investigations show that our engines idle 48 per cent of the time. Thus, when we have a recorded mileage of 100,000, this actually amounts to about 150,000 miles. So on our overhaul schedules, set at 125,000 miles, we figure these engines have been operated 48 per cent more than the record shows.

I see no particular reason why an engine could not be renewed indefinitely by using a carefully worked-out system of major overhaul. We run the engines as long as the buses remain in service.

(TURN TO PAGE 108, PLEASE)

...the same mufflers as those built for original equipment on millions of cars and trucks by our subsidiary—Oldberg Manufacturing Co.

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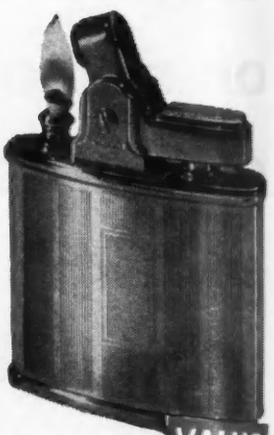
WIN ONE OF THESE HANDSOME PRIZES . .

VALUE $11.95

ON THE NOSE—This year Marquette welders again will be on the job at the Indianapolis Speedway, ready to service the cars in the big 500-Mile Auto Race. If you estimate the *exact* number of welds that will be made with Marquette equipment—official at the track—you'll win a handy, attractive New Haven Book Clock, worth $11.95. In fact, the 10 contestants who come *closest* to the exact figure each will win a clock. Duplicate clocks in case of ties.

CLOSE COUNTS—The *next twenty* contestants who come closest to the exact figure each will win a smart $7.25 Ronson Lighter. In case of ties, duplicate lighters will be awarded.



VALUE $7.25

AT LEAST 30 WINNERS!

MAIL ENTRY TODAY

MARQUETTE MANUFACTURING COMPANY
307 East Hennepin Avenue, Minneapolis 14, Minnesota

I estimate that_____(number) welds will be made by Marquette equipment at the 1951 500-Mile Auto Race.

Name.....

Address.....

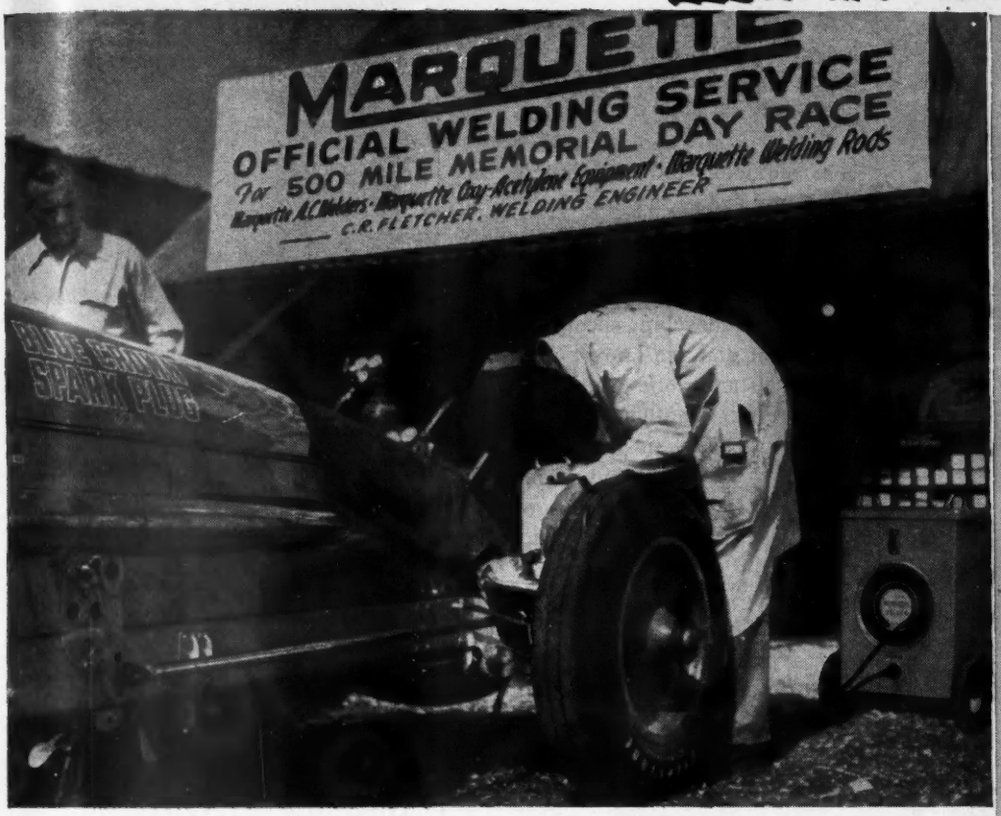
City.....Zone...State.....

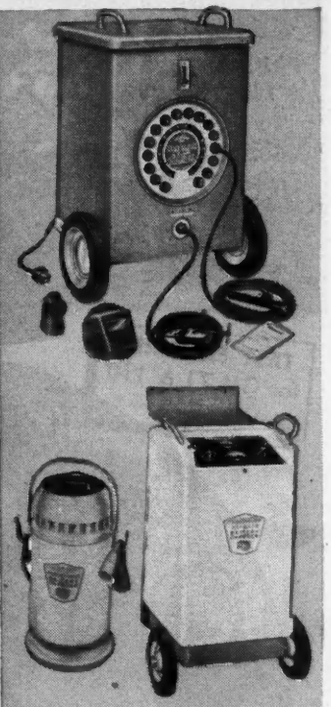
C

CONTEST RULES

1. Entries must be post-marked not later than May 26, 1951.
2. The number of welds will include all welds made from the time Marquette's Official Welding Service Garage is opened May 1 until the official start of the race.
3. Marquette officials will keep a running tally of welds as they are made. The final figure will be certified by a Notary Public.
4. Prizes will be awarded on the following basis: Each contestant who estimates the exact number of welds correctly will receive a New Haven Book Clock. The ten (10) contestants who come closest to estimating the correct figure each will receive a clock. The next twenty (20) contestants who come closest to the correct figure will each receive a Ronson lighter. In case of ties, duplicate prizes will be awarded.
5. Mail your entry on a penny postcard, or in an envelope if you prefer, to Marquette Manufacturing Co., 307 East Hennepin Ave., Minneapolis 14, Minn. Clip the entry blank from this ad, or ask your jobber for one. However, an entry blank is not required, but in fairness to other contestants, you may send in only *one* entry.

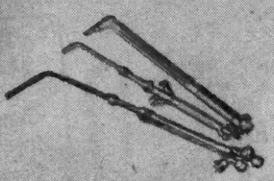
500-MILE RACE CONTEST!

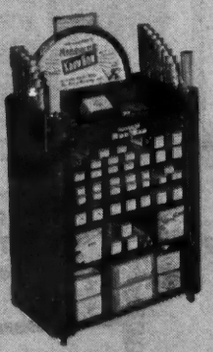

MARQUETTE
OFFICIAL WELDING SERVICE
for 500 MILE MEMORIAL DAY RACE
Marquette A.C. Welders · Marquette Oxy-Acetylene Equipment · Marquette Welding Rods
C.R. FLETCHER, WELDING ENGINEER
SPARK PLUG



MARQUETTE WELDING EQUIPMENT Will Be OFFICIAL at the "500" FOR THE 4th YEAR!

For the 4th successive year, Marquette Welding Equipment —and Marquette Battery Chargers—will be used exclusively at the Indianapolis Speedway during time-trials for the 500-Mile Memorial Day Auto Race. Last year Marquette welds were made on *every* car entered in the competition. In three years 1506 welds have been made—ALL without a single weld failure. Here's positive proof of the dependability of Marquette-built welding equipment and supplies. You can count on *all* Marquette equipment to help you do each job efficiently, effectively, economically. Buy Marquette and be *sure*.





GET IT FROM YOUR JOBBER

MARQUETTE

REGISTERED U.S. PAT. OFFICE

MARQUETTE
Manufacturing Co., Inc.
307 East Hennepin Avenue
MINNEAPOLIS 14, MINN.

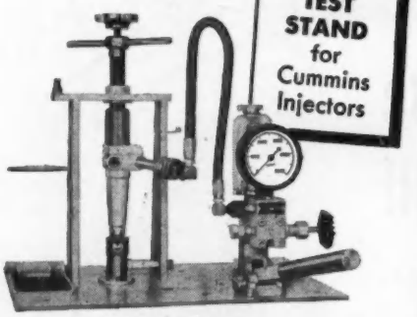
UNIVERSITY OF MICHIGAN LIBRARIES

Essential DIESEL TUNING TOOLS

NOZZLE TESTER for Bosch Caterpillar International Harvester Injectors

TEST FIXTURES for GM 71 & 110 Injectors

TEST STAND for Cummins Injectors



COMPRESSION TESTER for all Makes and Types of Diesels

Other Diesel Service Equipment:

- EXHAUST GAS METERS
- NOZZLE CLEANING KITS
- VALVE LAPPING BLOCKS

BACHARACH INDUSTRIAL INSTRUMENT COMPANY
7000 Bennett Street, Pittsburgh 8, Pa.

Send complete information on your Specialized Diesel Tuning Tools

Name.....

Company.....

Address.....

.....

Flexible Program

Continued from Page 105

Our buses are set up on a 10-year depreciation period; although, in recent years, we have had to run them longer. Whenever a bus is charged off on depreciation, we let the engine go with it.

Labor turnover in the main shop is exceptionally low; a tribute to our shop equipment and working conditions. Most of our mechanics have been with us more than five years.

A system of specialization has been evolved to develop special testing equipment and the know-how to use it. For instance, one group does electrical work, another brake work, another rebuilds air equipment, another diesel injectors and so on down the line. We have special torque converter men, cylinder head men, transmission and clutch specialists.

We have developed special tools for each classification to get the work on a production-line basis.

All of this adds up to the proved policy here—if we do it right in the shop, we never have to do it on an expensive road call.

END

Please Resume Reading Page 56

Arkansas to Survey Roads

An advisory committee has been formed under the Arkansas Highway Users Conference to work with state highway officials in the selection of needed road projects. The committee will be composed of all classes of highway transportation groups.

A survey will be made throughout the state and a priority list prepared. The plan will include suggested methods of finance said to be within the ability of the taxpayer, on a state basis rather than leaving the financing up to the individual community.

California Asks Road Materials

Both houses of the California Legislature have adopted a resolution memorializing the President and Congress to make highway construction materials available, including steel, cement and asphalt. The resolution declares that highway construction is vital as well as essential to the national defense. It also urges that the Defense Highway Act of 1941 be reactivated and appropriations for the "strategic network" and the "access roads" be made without matching by the states.

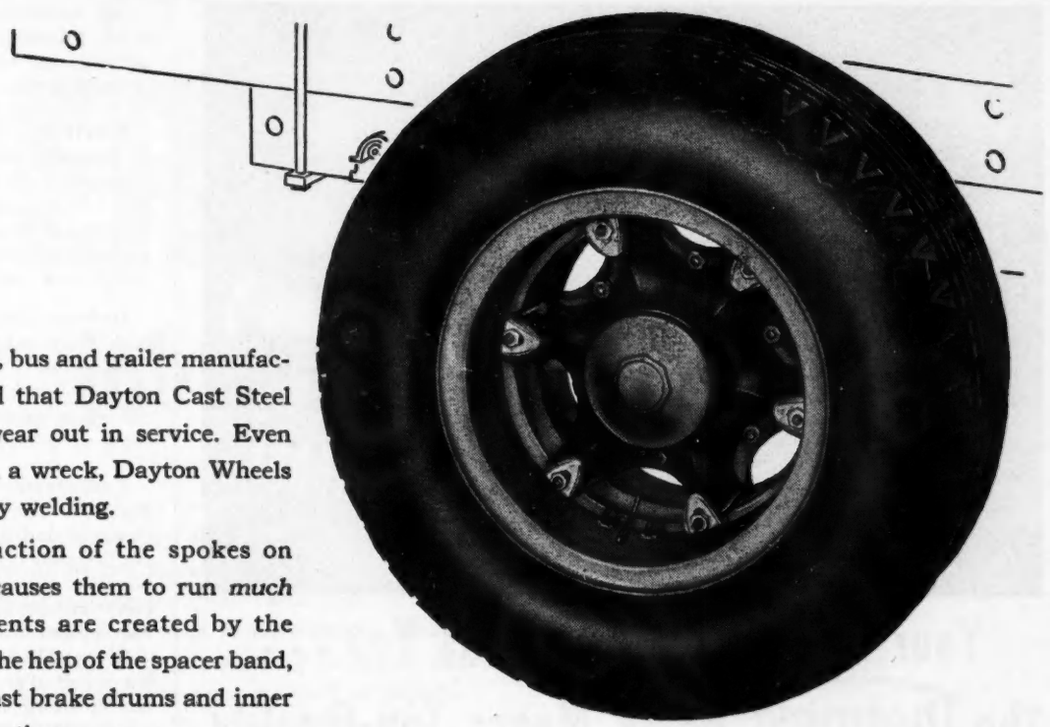
DAYTON WHEELS

are distributed through National Wheel & Rim Association Members

AKRON, Ohio.....Motor Rim Manufacturers Co.
ALBANY, N. Y.....Wheels Incorporated
ALBUQUERQUE, N. M.....Wheels & Brakes, Inc.
ATLANTA, Ga.....Harris Automotive Service, Inc.
BALTIMORE, Md.....R. W. Norris & Sons
BIRMINGHAM, Ala., Cruse-Crawford Wheel & Rim Co.
BOSTON, Mass.....Harvey Sales & Service Company
BOSTON, Mass., New England Wheel & Rim Company
BUFFALO, N. Y.....Frey, The Wheelman, Inc.
CALGARY, Alta., Canada.....Fisk Tire Service, Ltd.
CHARLOTTE, N. C., Carolina Rim & Wheel Company
CHATTANOOGA, Tenn., Harris Automotive Ser., Inc.
CHICAGO, Ill.....Stone Wheel, Incorporated
CINCINNATI, Ohio....Rim & Wheel Service Company
CLEVELAND, Ohio.....Motor Rim Manufacturers Co.
COLUMBUS, Ohio.....Hayes Wheel & Spring Service
CUMBERLAND, Md.....R. W. Norris & Sons
DALLAS, Texas.....Southwest Wheel, Incorporated
DAVENPORT, Iowa.....Stone Wheel, Incorporated
DAYTON, Ohio.....Rim & Wheel Service
DES MOINES, Iowa.....Des Moines Wheel & Rim Co.
DENVER, Colo.....Quinn & McGill Motor Supply
DETROIT, Mich.....H. & H. Wheel Service, Inc.
DETROIT, Mich.....Rim & Wheel Service Company
DOVER, Del.....R. W. Norris & Sons
EDMONTON, Can.....Alberta Wheel Distributors, Ltd.
FARGO, N. D.....Pioneer Rim & Wheel Company
FARGO N. D.....Wheel Service Company
GRAND RAPIDS, Mich.....Rim & Wheel Service Co.
HAGERSTOWN, Md.....R. W. Norris & Sons
HARRISBURG, Pa.....Standard Wheel & Rim Co.
HARRISONBURG, Va., Harrisonburg Wheel & Parts, Inc.
HARTFORD, Conn.....Connecticut Wheel & Rim Co.
HOUSTON, Texas..Southwest Wheel & Equipment Co.
INDIANAPOLIS, Ind.....Indiana Wheel & Rim Co.
JACKSONVILLE, Fla.....Southeast Wheel & Rim Co.
KANSAS CITY, Mo.....Borbein, Young & Company
KNOXVILLE, Tenn....Harris Automotive Service, Inc.
LOS ANGELES, Motor Rim & Wheel Service of Calif.
LOUISVILLE, Ky.....Auto Wheel & Rim Service
MEMPHIS, Tenn., Beller Wheel, Brake & Supply Co.
MILWAUKEE, Wisc., Stone Manufacturing Company
MINNEAPOLIS, Minn.....Pioneer Rim & Wheel Co.
MONTREAL, Can., General Automobile Equip., Ltd.
NASHVILLE, Tenn., Beller Wheel, Brake & Supply Co.
NEWARK, N. J.....Wheels Incorporation
NEW HAVEN, Conn., Connecticut Wheel & Rim Co.
NEW ORLEANS, La., Southern Wheel & Rim Service
NEW YORK, N. Y.....Wheels Incorporated
OKLAHOMA CITY, Okla.....Southwest Wheel, Inc.
OMAHA, Nebr.....Morgan Wheel & Equipment Co.
OMAHA, Nebr.....Omaha Rim & Wheel Company
PEORIA, Ill.....Peoria Wheel & Rim Company
PHILADELPHIA, Pa.....Kay Wheel Sales Company
PHILADELPHIA, Pa., Thomas Wheel & Rim Co., Inc.
PITTSBURGH Pa. .....Wheel & Rim Sales Company
PORTLAND, Oregon.....Auto Wheel Service
PORTLAND, Oregon.....Six Robblees, Incorporated
RALEIGH, N. C.....Carolina Rim & Wheel Company
RICHMOND, Va.....Dixie Wheel & Rim Company
ST. LOUIS, Mo.....Borbein, Young & Company
ROCHESTER, N. Y.....Frey, The Wheelman, Inc.
ST. LOUIS, Mo.....Borbein, Young & Company
ST. PAUL, Minn.....Wheel Service Company
SALISBURY, Md.....R. W. Norris & Sons
SALT LAKE CITY, Utah, Henderson Wheel, Rim Serv.
SAN ANTONIO, Texas, Southwest Wheel & Equip. Co.
SAN FRANCISCO, Motor Rim & Wheel Serv. of Calif.
SEATTLE, Wash.....Six Robblees, Incorporated
SOUTH BEND, Ind., Wire & Disc Wheel Sales Co.
SOUTH HILLS, Va., South Hills Wheel & Parts, Inc.
SPOKANE, Wash., Bearing & Rim Supply Company
SPRINGFIELD, Ill., Illinois Wheel & Brake Company
SPRINGFIELD, Mo.....Borbein, Young & Company
SYRACUSE, N. Y....Colbourn Wheel & Rim Company
TACOMA, Wash.....Six Robblees, Incorporated
TOLEDO, Ohio.....Wheel & Rim Sales Company
TORONTO, Canada.....Harpham Brothers, Ltd.
TORONTO, Canada, Wheel & Rim Co. of Canada, Ltd.
VANCOUVER, B. C., Canada....Wheel & Equip., Ltd.
WICHITA, Kansas.....Borbein, Young & Company
WINCHESTER, Va.....R. W. Norris & Sons
WINNIPEG, Can., Automobile Supply Company, Ltd.
WINNIPEG, Canada, Fort Garry Tire & Service, Ltd.
WINSTON-SALEM, N. C., United Automotive Service

DAYTON WHEELS

cost less for service than any other wheel!



The leading truck, bus and trailer manufacturers have found that Dayton Cast Steel Wheels do not wear out in service. Even when damaged in a wreck, Dayton Wheels can be repaired by welding.

The fanning action of the spokes on Dayton Wheels causes them to run *much cooler*. Air currents are created by the spokes and, with the help of the spacer band, are directed against brake drums and inner walls of the inside tires.

Increased pressure exerted by each of the rim nuts on the clamp bevel against the demountable rim prevents rim slippage and consequent uneven tire wear.

Dayton Wheels help to lower operating costs, too, and most smart operators have taken advantage of these savings for many years. Specify Dayton Wheels for new equipment and replacements.

THE DAYTON STEEL FOUNDRY COMPANY, DAYTON 1, OHIO

Dayton SPOKE TYPE CAST STEEL Wheels

Dayton Brake Drums
Drums assembled to the wheels at the factory give more perfect concentricity.

Dayton 5th Wheels
Standard equipment on many trailers. Quick coupling. Positive operation.

Dayton Landing Gears
Made in both hydraulic and mechanical types.

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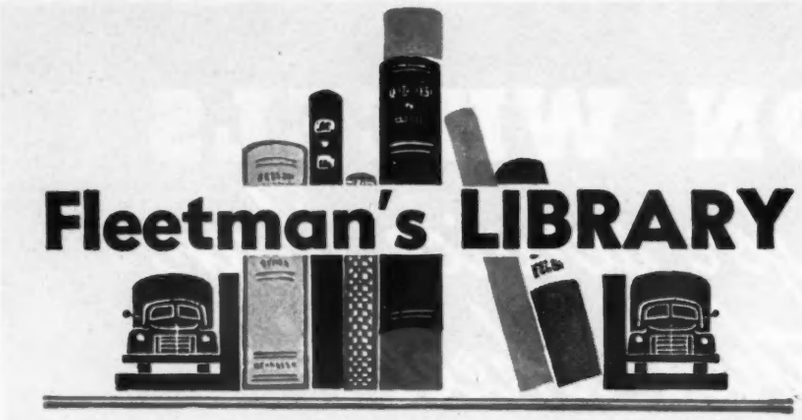


Who's Who of the 29 basic trailer models produced by Fruehauf is now being distributed by the Fruehauf Trailer Co., Detroit. It is metal bound and includes specifications, features, advice on which trailer type to use, how to save in weight, the best type of couplers to use, and an outline of Fruehauf's sales and service network.

Vickers Hydraulics new catalog M-5100 has been announced. It includes details, specifications, charts, and illustrations of oil hydraulic power packs, pumps, new series multiple unit valves, steering boosters, and motors. Available from Vickers, Inc., 1418 Oakman Blvd., Detroit 32, Mich.

Truck and Tractor Guide, published by Theodore Audel & Co, 49 W. 23rd St., New York 10, has been added to the Audel mechanics' series. The book gives handy reference information to service supervisors and mechanics on various phases of truck service, gas and diesel.

Electrical Connectors manufactured by Berg Mfg. and Sales Co., 18 E. 18th St., Chicago 16, Ill., were reviewed and published by company engineers and designers. Reprints of these reviews have been made available to owners and operators of tractor trailers and truck fleets.

Defense Activities are outlined in a book made available by General Services Administration. This will appear quarterly as a handbook or guide to federal agencies all or part of whose functions are devoted to defense mobilization.

Transportation Industries by Harold Barger is called a "study of output, employment and productivity." The book is not designed for any segment of the transportation system. There are sections, however, that will be of definite interest to the fleet operator.

Of notable interest is that the author has stated that analysis shows a retardation of growth in the traffic of commercial transportation agencies can be largely accounted for by the private passenger car and the *privctely owned truck.* The work is scholarly in its approach, contains 25 charts, 38 tables, 9 appendices, and may be recommended as valuable background reading for the transportation executive. The publisher is the National Bureau of Economic Research, Inc., 1819 Broadway, New York 23, N. Y.

Swift Floor is the title of a new bulletin prepared by the Monroe Co., Inc., Cleveland. It describes a material by that name for resurfacing and repairing floors, over which main traffic can roll within 60 sec after application. Copies of the bulletin (Form No. 108-11) are available from The Monroe Co., Inc., 10703 Quebec Ave., Cleveland, Ohio.

By Truck To The Cattle Market is the title of a bulletin just issued by the Western Highway Institute, San Francisco. The survey is number four in the WHI information bulletin service.

(TURN TO PAGE 112, PLEASE)

Your Own Experience Tells You . . .

The Thermoid Name Means Top-Quality

When you see the Thermoid name on brake lining it is your assurance that the brake job will be right the first time.

It's the same with Hydraulic Brake Parts

Always use genuine Thermoid hydraulic brake cylinder assemblies for complete replacement or Thermoid brake cylinder repair kits and parts for precision brake service.

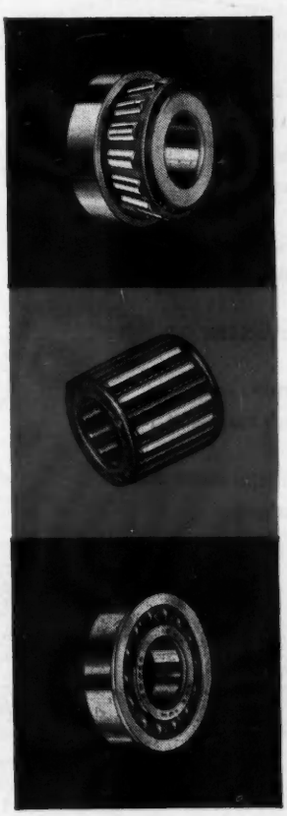
Thermoid

the standard of precision processing in brake lining; brake blocks; hydraulic fluid; cylinder assemblies; hydraulic brake parts.

Thermoid Company • Trenton, New Jersey

BOWER
ROLLER BEARINGS

get 'em from your FEDERAL-MOGUL jobber!



Bower Roller Bearings are known throughout the automotive industry for their precision quality. *Only* Bower Bearings are Spher-O-Honed!
For service, you can get these same high-quality Bower Roller Bearings from your Federal-Mogul jobber. He provides you with complete coverage of your tapered roller bearing needs, as well as popular numbers in straight roller bearings. There's a world of dependability behind them—Bower Quality . . . and Federal-Mogul Service!

FEDERAL-MOGUL SERVICE
(Division of Federal-Mogul Corporation)
DETROIT 13, MICHIGAN

BEARING
FEDERAL Mogul
SERVICE

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Fleetman's Library . . .

Continued from Page 110

Brake Progress News is an 8-page news bulletin describing important new developments of the brake lining industry. For further information write Gatke Corp., 228 N. LaSalle St., Chicago 1, Ill.

Hydent connectors for trailer-truck systems are listed in a "double feature" catalog just published by Burndy Engineering Co., New York 54, or Burndy Canada Ltd., Toronto 8, Ont. Copies of the catalog Y53 are available at these offices. It has a complete listing of the Hydent line and some additional tips on selection of the proper type connector. Installation tools are also listed and described.

Logging equipment made by Fruehauf Trailer Co., Detroit, Mich., appears in a booklet titled "Fruehauf Loggers," available at the manufacturer, 10940 Harper Ave., Detroit 32, Mich. The trailers include many features "tailored-to-the-truck" which are available through Fruehauf sales and service branches.

Cable Hoists are described in a six-page catalog on the Bob-Cat heavy duty electric model made by Ohio Hoist & Mfg. Co., Broadway and Henry Sts., Cleveland 5, Ohio. Copies are available from Ohio Hoist or from any of the Round Associate Chain Companies.

Solvent Cleaning is outlined in a booklet released by Oakite Products, Inc. The booklet reports upon the many classifications of cleaning in which solvent detergents are being successfully used. Free copies are available from Oakite Products Co., 126-D Thames St., New York 6, N. Y.

Running a lathe is a task that is quite involved even for the experienced mechanic. Minor details often forgotten may result in poor tooling or damage to the lathe. A booklet, "How To Run A Lathe," has been prepared by South Bend Lathe Works, South Bend 22, Ind. Copies cost 25 cents for paper binding and $1 for leather.

Reprints of "Airomatic Welding of Copper Base Alloys," an 18-page article originally appearing in "The Welding Journal," are available without charge from Air Reduction Sales Co., 60 E. 42nd St., New York 17, N. Y., or any sales branch of AIRCO.

Mobile communications during an emergency is the subject covered by a booklet prepared by Leece-Neville Co., Cleveland 14, Ohio. It tells how the two-way radio serves to help coordinate all operating services into an efficient team. It is prepared primarily for civil defense interests but will be an important reference item for any fleet operator.

Material Handling News, a periodical, has published a report to industry on the improvements made in mechanized materials handling. It details the various new developments in power handling equipment. The magazine is an external house organ published by Industrial Truck Division, Clark Equipment Co., Battle Creek, Mich.

Driver Training Equipment, a catalog published by American Automobile Assn., includes photographs and descriptions of 27 driver testing and training devices and four types of dual controls. Address AAA, 17th and Pennsylvania Aves., Washington 6, D. C.

Aluminum Data Book has just been published by Reynolds Metals Co., Louisville, Ky., to meet the demand for more factual information on aluminum alloys and mill products.

Dry Ice Refrigeration for trucks is the story in a folder prepared by Foster-Built Bunkers, Inc., 757 W. Polk St., Chicago 7, Ill. It is fully illustrated and features actual case histories of this type refrigeration system.

BENNETT FLEETMETER GASOLINE PUMPS BUILT TO LAST LONGER

Now, in these uncertain times, it is just naturally good business to buy the best for these reasons:

- Fleetmeters are built to take brute punishment.
- Maintenance is never a problem.
- Easy to operate . . . speedy delivery saves manpower.
- Bennett all-metal meter assures accurate measure.

TICKET PRINTER MODELS PROTECT AGAINST LOSSES

JOHN WOOD
Est. 1867

JOHN WOOD COMPANY
BENNETT PUMP DIVISION
MUSKEGON, MICHIGAN • TORONTO, ONTARIO
Offices in Principal Cities

Peterson Machine & Supply Co.

JOBBERS OF

Automotive Supplies & Equipment

PHONE 267

Fremont, Nebraska

Complete MACHINE SHOP Service and Welding

Parts for the CAR, TRUCK And TRACTOR

January 31, 1951

Hastings Mfg. Co.
Hastings, Mich.

Att: Howard Naylor

Dear Sir:

Two years ago we completely overhauled a Model #226 Continental Motor which operated an alfalfa chopper which gets very severe use. At the time of overhauling, one oil ring was broken (cast iron type) during installation. Not having a ring of the same type, we installed a Hastings Steel Vent ring.

One week ago we overhauled this motor again and found the cylinder with Steel Vent oil ring had .006 less wear than the other 5 cylinders.

We are very much sold on Steel Vents for rebores.

Yours truly,
PETERSON MACHINE & SUPPLY CO.
Leonard Peterson
By Leonard Peterson
Machine Shop Superintendent

TOUGH..BUT OH SO GENTLE

Thanks, Mr. Peterson . . .
for proving once again that Steel-Vent is gentle on cylinder walls.

HASTINGS MANUFACTURING COMPANY • HASTINGS, MICHIGAN
Hastings Ltd., Toronto

HASTINGS

STEEL-VENT PISTON RINGS

TOUGH on oil-pumping • GENTLE on cylinder walls

Chrome-Faced for Heavy Duty Service

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Carriers Coordinate Services

Continued from Page 61

lected $500, but earned only $200 of the amount collected. The Bureau writes a voucher for $300 against Buckingham's account. If United has earned $200 of this remaining $300, and Northern Pacific has earned $100, Bureau vouchers are then issued to United for $200 and to Northern Pacific for $100. Thus, each evening the carrier accounts are up to date and balanced.)

This joint through service offers a number of advantages to shipper and carrier alike. There is a substantial time savings; one day over any other freight service from Omaha to Spokane. The shipper has the advantage of coordinated tracing through the central Bureau; also the information service which the shipper could not have if the shipment were handled by three separate lines. And, of course, there is a great deal less damage because of the through shipments. The chief advantages to the carriers are the added selling points, the very substantial cost reduction, and, as with the shipper, fewer damage claims.

Maintenance of Trailers

MINOR repairs and servicing is handled by the carrier having the unit in possession, at the carrier's own expense. In case of major accident, the carrier having possession is responsible under carrier's own insurance. Major trailer overhaul, if necessary, is done by the line having possession but only after being approved by the trailer owner.

Waybill Procedure

THE waybill being used is an 11 copy, fan fold, multiple bill. The billing station makes out the bill from either shipper's bill of lading or other carrier's waybill copy.

When the joint waybill is made out, one copy is retained for the file of the maker, one copy is airmailed to the Bureau, and one copy is mailed to the central accounting office of each of the three carriers.

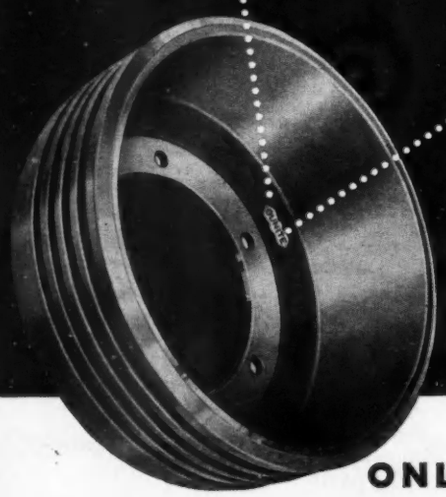
The freight bill remains at the billing station or accompanies the shipment; depending upon whether shipment is prepaid or collect. All remaining copies of waybill accompany shipment.

The carriers involved in this joint through trailer service believe that they have started a transcontinental program which is bound to spread.

END

Please Resume Reading Page 62

LOOK FOR GUNITE



...Cast Onto the BRAKE DRUM

ONLY A GENUINE

GUNITE BRAKE DRUM

BRINGS YOU

LOWEST COST PER MILE

Longer life and improved performance of GUNITE Brake Drums are due to the design and the GUNITE material of which they are made. GUNITE is specially alloyed, carefully processed metal with exceptionally strong, tough, rugged physical properties. GUNITE outperforms and outlasts other materials and brings your brake costs per mile to a minimum. Be sure you get genuine GUNITES when you order them. Some other brake drums are designed and painted to look like GUNITES. Genuine GUNITES have the GUNITE name cast onto the drum . . . look for it and be sure.

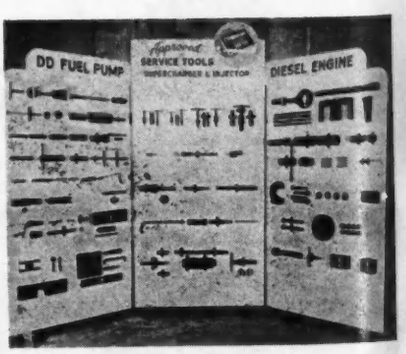
GUNITE FOUNDRIES

CORPORATION

ROCKFORD • ILLINOIS

GUNITE BRAKE DRUMS FOR TRUCKS, TRAILERS AND BUSES

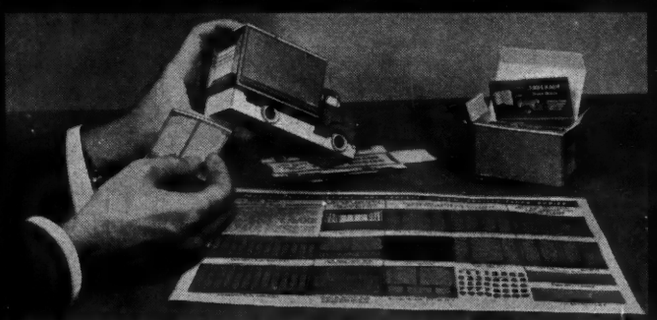
Diesel Service Tools



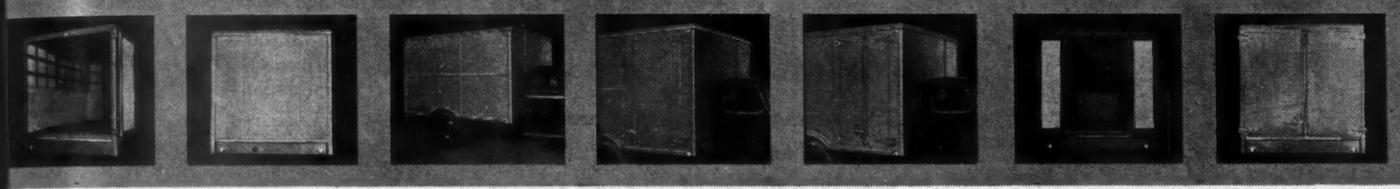
Recent additions to the line of Curtiss & Smith maintenance tools include this complete line of tools and equipment for servicing Cummins Diesel Engines, including reamers, wrenches, driving mandrels, fixtures and stands to hold the engine assemblies during overhaul, cutters, pullers, lifting fixtures and testing equipment

FRUEHAUF "Unit-Built" TRUCK BODIES

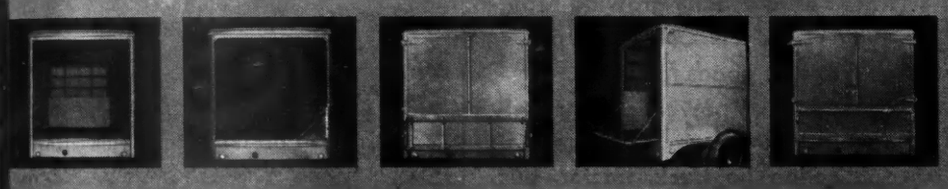
...are custom-fitted to your job... with over 500 body options!



Fruehauf Model Kit lets you "make up" your body—with all options—in miniature.



1. Open Top 2. Solid Rear End 3. Solid Sides 4. Single Side Door 5. Double Side Door 6. Narrow Double Rear Doors 7. Full Width Rear Doors



8. No Rear Door 9. Express Gate Rear 10. Tailgate (Outside Type) 11. Tailgate (Flush Type) 12. Tailgate (Doors Above)

Count all the advantages of buying a Fruehauf before you consider any other Truck Body: 1. Over 500 options. 2. All steel, "Unit-Built" construction. 3. Straight frame or wheelhousing . . . all popular lengths. 4. Fast assembling, mounting and painting service at 80 Branches coast-to-coast. 5. Custom-built quality at production-line prices.

FRUEHAUF Truck Bodies

"ENGINEERED TRANSPORTATION"

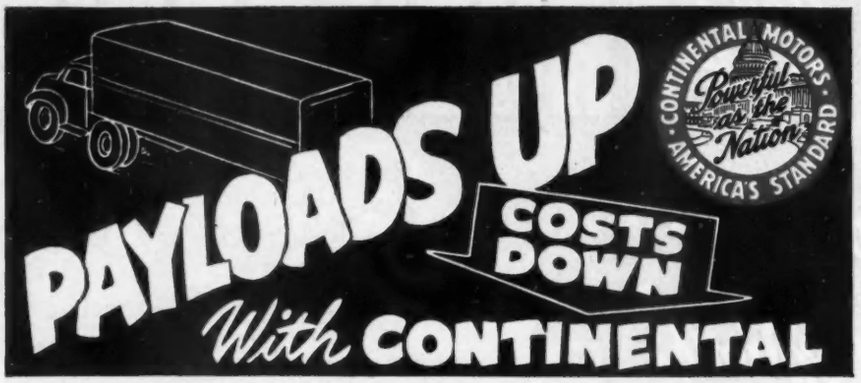
FREE CATALOG AND MODEL KIT!

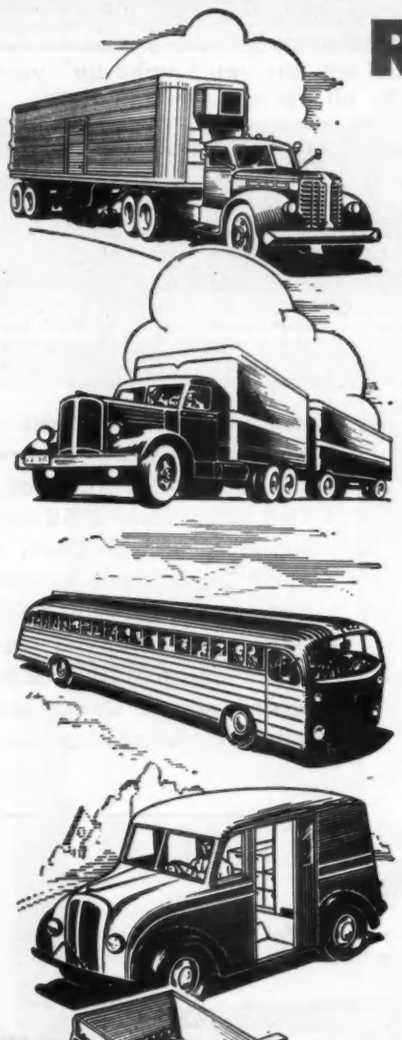
See your local Truck Dealer or Fruehauf man, or write

FRUEHAUF TRAILER COMPANY

BODY DIVISION

10953 Harper Avenue • Detroit 32, Michigan





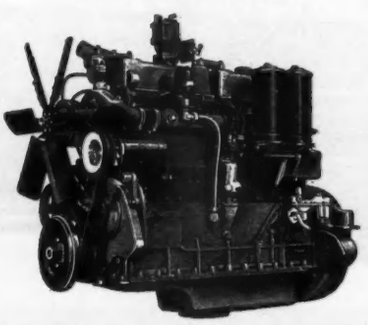
RED SEAL POWER

The increasing use of Continental Red Seal engines in specialized commercial vehicles of all kinds can be traced to a steadily-growing recognition of one fact: *Continental power delivers the goods for less.*

Continental power is completely specialized power. Whether the application be truck, tractor, bus, door-to-door fleet unit or what not, its power plant—if Continental—is engineered expressly for the requirements of its work. Elimination of compromise on any score whatsoever is reflected in larger payloads, lower maintenance and operating costs.

MODEL R-600 HEAVY-DUTY ENGINE

(transportation) Six-cylinder—overhead valve type—for buses, trucks and tractors. Delivers 110 to 160 net horsepower.



SERVICE EVERYWHERE

Continental Motors Corporation
MUSKEGON, MICHIGAN

Introducing . . .

Continued from Page 84

. . . M. C. TOWNSEND, as manager of the Omaha, Neb., sales and service branch of Fruehauf Trailer Co.

. . . R. J. SIGAFOO, engineering assistant to the president of Twin Coach Co., Kent, Ohio.

. . . HENRY J. PARRETT, as vice president of Fram Corp., Providence, R. I.

. . . ANDREW W. ROSE, assistant general manager of Warner Gear Div., Borg-Warner Corp., Muncie, Ind.

. . . RAYMOND H. SCHAEFER, as vice president of American Brake Shoe Co. in charge of research and development activities.

. . . RAYMOND D. DRISCOLL, as terminal manager at Dayton, Ohio, for Middle Atlantic Transportation Co.

. . . FRED P. BAKER, president of the National Truck Leasing System, as a member of the industry advisory committee of the Office of Price Stabilization.

. . . J. J. BRADDICK, new manager of the Southern division of George F. Alger Co., Detroit. His headquarters will be at 1617 Elmore St., Cincinnati, Ohio.

. . . PHILIP A. HOLLAR, recently appointed Deputy Undersecretary of Commerce for Transportation.

. . . Directors of Brown Equipment & Mfg. Co., New York, include: E. L. STORY, W. E. LARKIN, and MORTIMER C. WHITE, JR.

. . . GEORGE W. MARSHALL, JR., and ALVIN F. HEINSOHN as vice presidents of Raybestos-Manhattan, Inc., Passaic, N. J.

. . . At Goodyear Rim Division, Akron, Ohio, H. J. LAFAYE will be sales manager and W. J. LEE, assistant general manager.

. . . H. J. HOWERTH, named manager of the Detroit branch of Stewart Warner Corp. of Chicago.

. . . EDMUND LUDLOW, chief engineer at the automotive division of Arvin Industries, Inc., Columbus, Ohio, as the newly elected member of the company's board of directors.

. . . Service managers in nine of Fruehauf Trailer Co.'s divisions are: AUGUST M. FIGI, Detroit; JOSEPH KLINZING, Pittsburgh, Pa.; W. C. DOYLE, Memphis, Tenn., Southern Division; JAMES M. HANKS, Dallas, Tex., Southwestern division; A. W. HUNT, Chicago, Central division; ALFRED S. CHRISTIANSEN, Omaha, Nebr., Midwest division; AL MANERBINO, Denver, Col., Rocky Mountain division; HANS HELMLE, Los Angeles, Calif., Northern Pacific Coast division, and J. D. KELLEY, Charlotte, N. C., Southeastern division.

END

Please Resume Reading Page 110

For tough, complete protection

USE QUAKER STATE SUPERFINE LUBRICANTS

TRANSMISSIONS AND REAR AXLES DEMAND exacting lubrication. Like an armadillo's armor plating, it must be tough and strong. And, at the same time—it has to be exceptionally resistant to cold, moisture, rust, corrosion, heat and foaming. That's why more and more bus and truck fleet operators specify Quaker State Stabilized Quadrolube for transmissions and rear axles (except Hypoids). For Hypoids use Quaker State *Super Quadrolube*. Especially formulated for heavy-duty equipment, these lubricants embody all the unparalleled qualities of the 100% pure Pennsylvania base oil.

To give your equipment longer life—assure more dependable performance, use QUAKER STATE Superfine Lubricants.

A COMPLETE LINE OF FINEST QUALITY LUBRICANTS

- Quaker State Super Quadrolube
- Quaker State Viscous Lubricant
- Quaker State Wheel Bearing Lubricant
- Quaker State EXPP2 Lubricant
- Quaker State Universal Joint Lubricant
- Quaker State Waterproof Lubricant
- Quaker State Quadrolube

Are Your Brakes Balanced?

Continued from Page 63

phragms as the only possible source of of the pressures required to operate presure differential. Checks were made front and rear brake diaphragms. *Here, at last, was the 2 psi differential we are searching for!*

Based on the difference in effective area of front and rear brake diaphragms, the additional amount of compression required on the rear brake chamber return spring to balance out 2 psi air pressure was calculated. We had a local machine shop make up a pair of these new springs and assembled them in the rear brake chambers. Push-out pressures for both front and rear brake chambers now balanced at 6 psi and front and rear brakes came on simultaneously as the foot application valve was depressed.

Two of the three prerequisites for balanced brakes had now been satisfied. But what about the third—temperature differential between front and rear brake drums?

Tests on the road at maximum braking temperatures showed a differential of 50 deg.-75 deg. F between front and rear brake drums, instead of the 185 deg. F differential originally found.

Now we felt reasonably sure that our brakes were balanced. But would balancing pay dividends in longer brake lining life and lower brake maintenance costs?

Lining Life Increased 62%

SEVERAL buses were reworked eliminating the quick release valve and installing new rear brake chamber return springs. These vehicles were placed in service in March and April of 1950. Linings on the first two have just worn out—at an average mileage of 48,000 miles for both front and rear linings. Compared with an average of 29,500 miles for front and rear linings removed from the same type buses during the last 12 months, *this represents a 62 per cent increase in overall lining life.*

Our expenditures this year on brakes and brake control mechanisms based on a 29,500 mile average lining life are estimated at $25,500 material and $22,500 labor or a total of $48,000. Since approximately 90 per cent of the material expenditures ($22,950) and 90 per cent of the labor expenditures ($20,250) or a total of $43,200 are in connection with brake relines, any reduction in these costs will be inversely proportional to the increase in lining life. Based on a 48,000-mile average lining life, the potential annual savings in brake maintenance costs then would be as follows:

Material:	$22,950 ×	29,500 / 48,000	= $14,100
Labor:	$20,250 ×	29,500 / 48,000	= $12,450
Annual brake reline costs based on 48,000-mile lining life			$26,550
Annual brake reline costs based on 29,500-mile lining life			$43,200
Potential Annual Saving			$16,650

In addition to the above, some savings in tire costs also are indicated. Unfortunately, sufficient tire mileage has not been accumulated since we started making tread depth measurements to predict what this saving will be in dollars and cents. But with today's costs of rubber and cotton, any increase in tire life is most welcome, be it ever so small.

END

Please Resume Reading Page 64

MARION HOISTS DO IT EASIER!

... that's why they are more

• EFFICIENT
• DEPENDABLE
• ECONOMICAL

● By use of a curved track in the patented lifting arms, MARION gives you a hoist that operates at a uniform oil pressure throughout its dumping cycle.

Some conventional hoists require a peak oil pressure of 1100 lbs. per sq. in. to do the same job that a comparable MARION hoist, with patented lifting arms, does at only 615 lbs. per sq. in.

Consequently, MARION Hoists actually do their job easier—hydraulic systems last longer, are more efficient and dependable, and, in the long run, more economical to own and operate.

Ask us for the name of your nearest MARION Distributor—let him give you the complete story.

MARION BODIES AND HOISTS

MARION METAL PRODUCTS COMPANY
MARION, OHIO, U.S.A.

STANDARD AND SPECIAL HOISTS AND DUMP BODIES FOR LIGHT, MEDIUM AND HEAVY DUTY SERVICE

JUST 1 CALL...

...for all your Engine Bearing Needs

Your Federal-Mogul jobber provides *complete* engine bearing service, with the widest possible coverage of engine makes and models. You get the parts you need for bearing replacement . . . and you get them when you need 'em. You make just one call for *all* your engine bearing needs.

You can depend on the contents of the red-and-black Federal-Mogul box—it's your guide to quality and accuracy in engine bearing service!

FEDERAL-MOGUL SERVICE
DETROIT 13, MICHIGAN

(Division of Federal-Mogul Corporation)

BEARING FEDERAL Mogul SERVICE

Engine Bearings (Main, Connecting Rod and Camshaft) • Bushings • Connecting Rod Service—Reconditioned Connecting Rods, Rebabbitted Connecting Rods • Connecting Rod Bolts and Nuts • V-Seam Piston Pin Bushings • Shims and Shim Stock

Good Public Relations

Continued from Page 66

management on the industry's highway courtesy program. I want to point out, however, that all of the good that such acts create can be undone by the conduct of a few thoughtless individuals.

Although not selling transportation, many private fleet operators have done an outstanding job of selling their products by the operation of their vehicles and by the appearance and actions of their drivers on the public highways and streets. Unfortunately many who do not sell directly to the public have had a total disregard of the bad effects caused by their operations in the public mind and the damaging consequences. The damage that has been done to all legitimate operators by those who deliberately overload their vehicles cannot be estimated from the standpoint of loss of public good will and unnecessarily restrictive legislation which handicaps the honest operators, but still allows the chiselers to get away with murder.

This brings us to the next important point in developing good will and it applies equally well to the individual owner, operator or fleet operation. I refer to management policy or the basic philosophy of the operator. His thinking must be right or he doesn't belong in the business. We know there are individuals and companies alike that have abused the privilege of being in business by flaunting established regulations.

The variations in regulations between states and between interstate and intrastate common carriers, private carriers, farmers and contract haulers, to name a few, again creates a problem in selling the public a true picture of the motor carrier industry. The constant legislation being discussed in all 48 states of the union, with the motor carrier as the whipping boy in most cases, is confusing to all concerned. The wide variations in taxes as well as weight and length regulations are little understood by the public or the industry for that matter. Usually such discussions and debates are clouded with waves of propaganda originating from both sides of the question, leaving the public more confused than ever. A very large percentage of all voters own private cars; they are apt to take sides against the truckers unless adequately informed on the specific issues in a particular case. This is particularly true in regard to highway taxation. Some day we will undoubtedly see more uniformity in regulations affecting interstate highway commerce and many of the barriers now existing and acting as a retarder will be eliminated.

Probably the thing that has been emphasized to the greatest extent in the industry and by fleet owners is the development of good public relations through driver conduct. Next to sound top management policy on over-all operations this is undoubtedly the most important and certainly the most tangible medium through which to mold favorable public opinion, or for that matter unfavorable, as has been previously cited. In no other industry is an individual given such a wonderful opportunity to influence large numbers of people either for better or for worse. A poor store or hotel clerk will only insult a few patrons daily before being

(TURN TO PAGE 122, PLEASE)

NIEHOFF

warranteed ignition parts

FOR TROUBLE-FREE SERVICE!

Niehoff ignition parts are especially designed for every make and model truck in your fleet. And you can count on them for the high quality and precision-engineering you need for dependable, trouble-free service. Every Niehoff part is warranteed for 4,000 miles or 90 days! For long hauls, for short hauls, for the best in ignition—choose Niehoff. Write for free catalog today.

C. E. NIEHOFF & CO.
4925 LAWRENCE AVE., CHICAGO 30, ILL.
BRANCHES: BOSTON 34, MASS., 254 Brighton Ave.
LOS ANGELES 15, CALIF., 1330 W. Olympic Blvd. • NEW YORK 19, N. Y., 250 W. 54th St.

NIEHOFF Warranteed Ignition

From a Dollar and Cents Angle

EDWARDS TRAILERS

Are Paying Investments

More new Edwards Trailers join the fleet of the Graff Trucking Company of Kalamazoo, Mich.

You can now get trailers on a production basis that are practically tailor-made for the commodity you haul. Edwards makes it possible by bringing a new degree of flexibility to the production line.

Partly through engineering developments, and partly through construction methods Edwards has developed, standard Edwards trailers can be fitted to your haulage task. For example: if you haul bulky goods where extra inside width and height make for greater ease of freight handling, saves time and adds to smoother operation, Edwards can easily meet your needs.

Dollar for dollar in furnishing you with haulage equipment tailored to the task, you can't match Edwards trailers. Soundly engineered, they are known for low maintenance and long life, too. What are your trailer requirements? Get in touch with Edwards today.

WRITE DEPT. C-5

CORRUGATED TRAILERS | HEAVY DUTY FLATS | SMOOTH PANEL TRAILERS | TRUCK BODIES | TRAINS—DOUBLE BOTTOMS | TANDEM HEAVY DUTY TRAILERS

EDWARDS TRAILER AND BODY COMPANY
DIV. OF EDWARDS IRON WORKS, INC.
SOUTH BEND 23, INDIANA

Public Relations

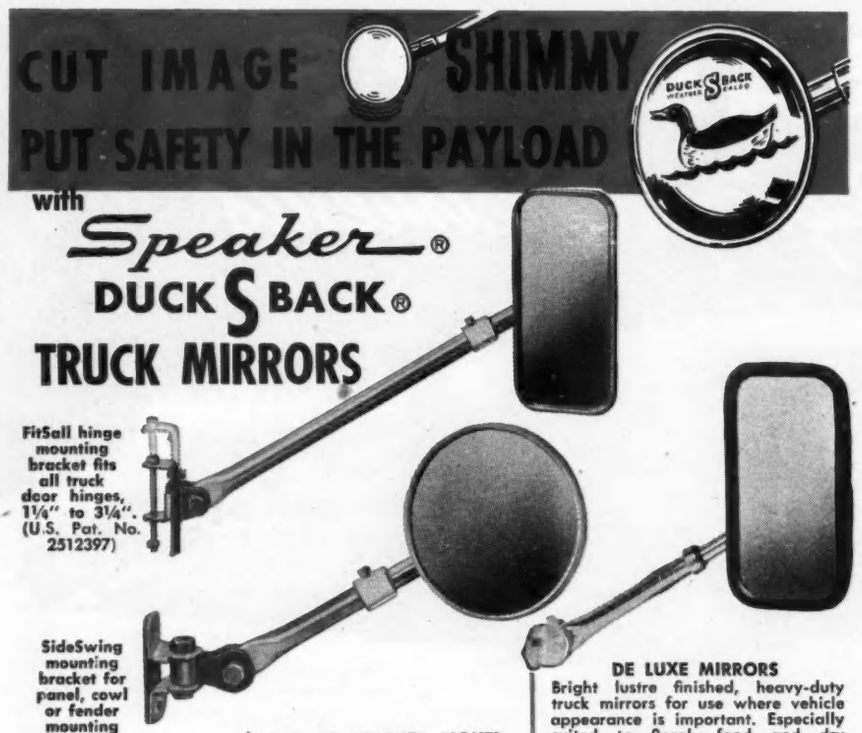
Continued from Page 120

tossed to the wolves. An airplane pilot is fairly immune from creating ill will. Likewise personnel on a freight train have very little opportunity either way to influence public opinion by direct contact. By contrast a truck and its driver both in the city and on the highway are constantly before the public eye. No matter what route he may be driving a truck operator is passing hundreds of cars and people daily. If he drives his vehicle in a manner which offends those who observe him he is subject to bringing severe damnation on his company and the industry as a whole. Little matter that his steady day-to-day operation is little noticed or that it is taken for granted and that he is frequently accused of someone else's mistakes. Since our drivers are our "showcase exhibits" along with the vehicles they operate it must be the first objective of any company, particularly a fleet operation interested in favorable public opinion to insure that its vehicles are clean and in good mechanical condition and operated by skilled, careful, safe, courteous and neatly appearing drivers. There can be no excuse for operating vehicles which do not meet minimum safety standards. Without those basic ingredients it will indeed be difficult to stir up a palletable brew of good public relations for the individual carrier or the industry which he represents.

This is a human industry and its success is dependent to a very large extent on the ability and cooperation of management, labor leaders and the individuals who make up the more than 5,000,000 persons directly employed in it. I am speaking particularly of for-hire common carriers whose rates of service are determined by state and federal regulations and who are not only dependent upon public acceptance of the services offered to operate successfully, but who are entirely dependent upon sound management and capable supervision to stay in business. It is particularly important that the selection, training and supervision of employees in the fleet operation be thorough and complete in every phase. It may very likely be more difficult in the immediate future to secure the high type of personnel required to win public favor, from the cab, on the dock, in the office, over the telephone and in a customer's office; but no relaxation in our efforts in this direction can be afforded. The fact is that our training and supervisory programs must be intensified. Personnel performing their assigned functions properly and with due regard

(TURN TO PAGE 124, PLEASE)

CUT IMAGE SHIMMY
PUT SAFETY IN THE PAYLOAD
with Speaker® DUCK S BACK® TRUCK MIRRORS



FitSall hinge mounting bracket fits all truck door hinges, 1¼" to 3¼". (U.S. Pat. No. 2512397)

SideSwing mounting bracket for panel, cowl or fender mounting

★ THEY'RE FEATHER LIGHT!
★ THEY'RE WEATHER TIGHT!
★ THEY'RE BUILT RIGHT!
★ THEY'RE PRICED RIGHT!

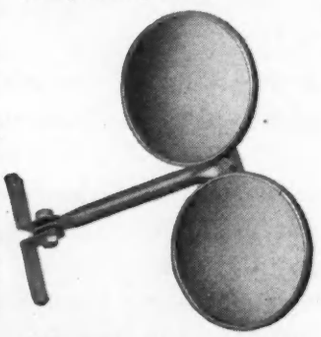
Here's a complete line of truck mirrors to fill every fleet requirement, from the smallest panel truck to the mighty cross-country carrier — engineered and built to cut image shimmy and blur — to provide clear, safer rear vision. Lightness of mirror head, strength of mirror arm and rigidity of mounting bracket practically eliminate normal vibration and whip. Speaker brings you practical design, utility and durability . . . a boon to driving safety.

Features: Feather-light aluminum alloy mirror backs ★ WeatherSealed mirror heads in 5 and 6 inch round and 4 x 8 and 6 x 8 inch models ★ Double-reinforced ball socket and rubber gasket ★ Clear, non-glare or polarized glass ★ Steel or rubber doors.

Speaker DuckSback Mirrors surpass all existing specificaton requirements for durability and safety.

GOT IT? . . . GET THEM FROM YOUR JOBBER!

DE LUXE MIRRORS
Bright lustre finished, heavy-duty truck mirrors for use where vehicle appearance is important. Especially suited to floral, food and dry cleaning delivery trucks.



DUAL-VISION VANETT MIRRORS
For use where driver may operate vehicle from standing or seated position. Two 5" round aluminum mirror heads mounted on 8" T-shaped aluminum-enamel finished arm. Panel mounting bracket. An original equipment type mirror now supplied through jobbing channels.

Other Speaker Products:
Passenger Car Mirrors, Truck and Bus Mirrors, Self-canceling Passenger Car and Truck Directional Signals, Back-up Lights, Slow Lights, Truck Lights, Hand Brake Signal Lights, Match Patches, Vulcanizers, Tire Repairs.

J.W. Speaker® CORPORATION
3939 N. Well St., Milwaukee, Wis., U.S.A.

Cadillac's First Walker Tank

Top ranking Army and Cadillac officials met at the division's Cleveland tank plant recently to greet the first production model of the new Walker Bulldog tank. The event was three months ahead of schedule. Shown are (L. to R.) Lt. General T. B. Larkin, assistant chief of staff G-4; Edward N. Cole, tank plant manager; Brig. General D. J. Crawford, commanling general ordinance tank automotive center, and Don E. Aherns, general manager of Cadillac motor car division.

Don't send a boy to do a man's job!

500,000,000 MILES!

That's the fleet service mileage rolled up yearly with Phillips *66* Heavy Duty Motor Oils.

What's behind this record? One good reason is our "cold fractionation" process that separates our lube oils at *low* temperatures. No overcooking! No scorching the basic film strength of our good crudes.

Carefully picked additives provide carbon dispersion . . . engine cleanliness . . . reduced ring sticking . . . long engine life.

Rigid production tests in our new solvent extraction lube plant further assure high quality heavy duty oils. One of our on-the-job lubrication engineers will gladly give you the full story on Phillips *66* Heavy Duty Motor Oil. Phillips Petroleum Company, Bartlesville, Oklahoma.

Oil for the Engines of Commerce

Phillips 66

PHILLIPS 66 HEAVY DUTY MOTOR OIL

Public Relations

Continued from Page 122

for the public interest can do more to win public favor than any one thing—given top management support through the adoption of policies that recognize the interest of the public.

Undoubtedly the greatest boon to good public relations for the motor carrier industry will be brought about when our highways and streets are brought up to date with a minimum of four lanes on the heavily travelled routes together with traffic regulations and parking restrictions in urban areas that will permit a much freer flow of traffic. It hardly seems possible that we can surmount some of our problems until our roads are widened sufficiently to eliminate the bottlenecks and congestion caused by passenger as well as commercial traffic on cross country highways, on mountain grades and on our city streets.

In conclusion I would like to point out to you that in my opinion favorable public relations are just as important as sales or operating ratios in the motor carrier industry and that too much emphasis cannot be placed upon sound top management policies which have the public interest as a primary basis for their adoption. Better public relations for the motor carrier industry and for fleet operators, must come from the inside and work out. This means that policies must be adopted which are sound, reasonable and take into consideration all phases of employee and public relations. Given top management backing, the public relations job can be accomplished as follows: First, conduct operations, whatever type of service, so as to win the respect of the public. Second, place accurate facts and information before the public. Third, show willingness to be progressive, cooperative and courteous in the use, regulation and support of the public right of way. Fourth, exercise maximum care in the selection and training of personnel.

END

Please Resume Reading Page 67

Tandem Suspensions
very successfully reducing transportation
and maintenance costs for America's truck operators.
WRITE FOR FOLDER!
NEWAY Equipment
Muskegon, Michigan, U. S. A.
ALSO MANUFACTUR OF THIRD FOR TRUCKS AND

Reciprocity Restrictions Noted

Legislation to restrict or eliminate motor vehicle reciprocity agreements between several states is under consideration in various state legislatures. The effect of the ton-mile tax trend is noted as stimulating legislation to abolish mutual agreements on registrations, use tax, etc.

In Minnesota, a bill is in process which will forbid reciprocity if the registration fee on the out-of-state vehicle is computed on a mileage basis or if registered for less than gross weight.

Indiana may void all reciprocity agreements in respect to vehicles over 20,000 lb gvw, and all vehicles operated in common or contract carrier service. This will effect trucking service in 30 states it is reported.

Missouri considers striking out reciprocity by requiring ports of entry to be set up similar to those of neighboring Kansas.

New Mexico proposes to eliminate ports of entry, but on the other hand, abolish reciprocal agreements for exemption of non-resident vehicles from mileage taxation.

The House of Representatives of North Dakota merely "repeals reciprocity" on vehicle licensing and registration.

An Oregon bill also repeals provisions which permitted reciprocal agreements on apportionment of commercial fleet registrations according to mileage operated in each state.

And finally, two states have proposed legislation which would subject non-resident owners and operators to all fees and taxes upon violation of any state laws, including weight regulations. These states are Nevada and Texas.

New Britain WRENCHES

PUT POWER WHERE IT COUNTS

You'll breeze through the toughest nut-turning jobs with New Britain Wrenches . . . because these famous, power-packed Tools were designed by mechanics for mechanics! Precision milled heads slip on easily for New Britain's "sweet fit *on the nut*". Beneath that beautiful, triple-plated chrome finish is a brawny, rugged backbone of the finest alloy steel, scientifically heat treated to the ultimate in strength and durability. One "feel" of the long reaching, slim balance of these great Wrenches and you'll get the thrill—and thrift—of dependable Tools that will serve you well for years. Just *compare* New Britain's attractive prices!

Your jobber has New Britain in Open End, Tappet, Box and Combination Wrenches in a complete range of styles and sizes, plus many handy Wrench Sets ready for you. In fact, whenever you need *any tool,* the brilliant New Britain Line is as near as a phone call to your Jobber! The New Britain Machine Co., New Britain, Conn.

N-A-P-A National Automotive Parts Association Assurance of Quality

New Britain

GREATER STRENGTH • BETTER FIT **HAND TOOLS**

he's free of concern . . . his trucks won't burn

Going home . . . relaxing after a day of high-geared activity is no trouble for this trucker! His mind's at ease about fire . . . thanks to the safety given his trucks, cargoes, terminals and garages by efficient, quick-acting C-O-TWO Fire Protection Equipment.

You too, can have this same peace of mind . . . this same positive protection from costly fires by installing complete, approved C-O-TWO Fire Protection Equipment. For instance, with a C-O-TWO Automatic Fire Protection System in a trailer, you have a 24 hour a day automatic fire watchman . . . whether under way or parked. Heat detectors on the ceiling quickly actuate the system . . . then clean, dry, non-damaging, non-conducting carbon dioxide gas is flooded into every nook and corner, extinguishing the fire in seconds before it spreads and causes serious damage. After use, the carbon dioxide disappears without a trace . . . no water damage, no after fire mess.

C-O-TWO Portable Fire Extinguishers . . . either carbon dioxide type or dry chemical type . . . render fast, positive action for extinguishing fire during the incipient stage. C-O-TWO Portable Fire Extinguishers are designed to take abuse . . . rugged construction, no extra gadgets protruding or complicated operating parts . . . built to rigid specifications to assure you of lasting, efficient fire protection.

So, let an expert C-O-TWO Fire Protection Engineer help you in planning complete and up-to-date fire protection facilities now. Write us today for complete free information . . . our experience is at your disposal.

TRADE MARK C-O-TWO REG. U.S. PAT. OFF.

C-O-TWO FIRE EQUIPMENT COMPANY

NEWARK 1 • NEW JERSEY

Sales and Service in the Principal Cities of United States and Canada

Affiliated with Pyrene Manufacturing Company

MANUFACTURERS OF APPROVED FIRE PROTECTION EQUIPMENT

Squeez-Grip Carbon Dioxide Type Fire Extinguishers • Dry Chemical Type Fire Extinguishers
Built-In High Pressure and Low Pressure Carbon Dioxide Type Fire Extinguishing Systems
Built-In Smoke and Heat Fire Detecting Systems

Fleet Notes

WATERTOWN, N. Y. The New York Central Railroad has begun to divert some of its less-than-carload freight from rails to trucks for transportation to points north of Watertown.

LANCASTER, PA. Harry T. Waters, president of Shirks Motor Express, Inc., has puchased the interest in the firm formerly held by Mark R. Herr, secretary-treasurer.

OTTAWA, ILL. Scherer Freight Lines has a new district manager for the company's central Illinois district, comprising the terminals of Decatur Springfield, Jacksonville, Lincoln, Clinton, Bloomington and the surrounding areas.

OAKLAND, CALIF. Effective 2 April 1951, Pacific Intermountain Express Co. has provided Wichita, Kans., with a daily freight service to and from the intermountain territory and the west coast.

SEATTLE, WASH. Utility Trailer and Equipment Co., distributors of Heil bodies, hoists, and tanks opened a new plant in the city's truck district. This agency started only nine years ago with one salesman and a rented room.

NASHVILLE, TENN. Operating rights of the Chandler Freight Lines, Birmingham, Ala., have been sold to Super Service Motor Freight Line Co. of Nashville. Freight will begin to move under the Super Service name as soon as the transaction has the OK of ICC.

ATLANTIC COAST LINE, one of the South's major railroads has asked the ICC for permission to expand its trucking business.

CHELSEA, MASS. The honor of trailblazing goes to Chelsea Trucking Co. for being the first in New England to haul mail under the new "star route" system. The company has a temporary contract to haul between Boston, Salem, and Lynn, Mass.

BUFFALO, N. Y. Lehigh Valley Railroad will ship parts of its less-than-carload lots of freight by truck, east of Buffalo and west of Ithaca, N. Y.

"Here's a few more things I don't want broken."

THE SPRING DOESN'T CARE!

When truck men talk shop, their opinions often vary as to how to make a tough haul easier. Yet, they *do* agree that when extra speed or power is needed, shifting must be *quick, easy* and *positive!* That's why so many prefer Timken-Detroit Two-Speed Double-Reduction Final Drives with Spring-Flex Power Shift!

The easy, instantly responsive control of the Timken-Detroit Two-Speed Double-Reduction Final Drive is not dependent upon the type of power unit used for actuation. It is controlled by the flexible, predetermined force of the spring *built into the shifting mechanism!* What's more, this rugged power shift is available with electric, vacuum or compressed air actuation —depending on your individual needs and preferences.

If you build or buy trucks, specify Timken-Detroit Two-Speed Double-Reduction Final Drives with Spring-Flex Power Shift! They're *proved* by years of trouble-free operation.

TIMKEN-DETROIT

SPRING-FLEX POWER SHIFT OPERATES EQUALLY FAST AND DEPENDABLY WITH ANY TYPE OF ACTUATION— ELECTRIC MOTOR, VACUUM OR COMPRESSED AIR! IT'S THE SPRING THAT DOES THE ACTUAL SHIFTING!

WRITE FOR FREE LITERATURE AND PERFORMANCE DATA!

TIMKEN Detroit AXLES

A PRODUCT OF THE TIMKEN-DETROIT AXLE COMPANY
DETROIT 32, MICHIGAN

The Accepted D A Standard
TRADE MARK REGISTERED

PLANTS AT: DETROIT AND JACKSON, MICH. • OSHKOSH, WIS. • UTICA, N. Y. • ASHTABULA, KENTON AND NEWARK, OHIO • NEW CASTLE, PA.

CCJ Reports

Continued from Page 37

NPA Reorganizes

Numerous changes in the National Production Authority organization have recently been announced. Manly Fleischman heads six bureaus with from five to eleven divisions each. The new motor vehicle division is one of the eight under the Industrial and Agricultural Equipment Bureau, Franz T. Stone, chief.

Also, within the new motor vehicle division there are a number of changes. Robert Cass is acting director; George R. Davis, acting deputy director; Irving C. White, and Fred Glover, general staff assistants, and several staff members responsible for labor, legal, military liaison and procedures. Raymond T. Fussell, assistant director, is in charge of the truck, trailer, automobile, and transit vehicle branches. Lawrence Beerman is an assistant director responsible for the components branches which involve engines, replacement parts, maintenance equipment, etc.

Conference Postponed

The Conference for Top Management of Motor Fleets which had been scheduled for June 14 and 15 on the Pennsylvania State College campus has been postponed because of the later announcement that the President's Highway Safety Conference will be held on those dates. The new dates for the conference are October 4 and 5.

Representative Elected

The World Petroleum Congress which is to meet at The Hague, Netherlands, May 28 to June 6, will have Frank M. Porter as American vice president. Mr. Porter is president of American Petroleum Institute. Other American officials will serve on the Congress Committee of Honour, including: W. Alton Jones, president of Cities Service Co.; Lt. Gen. E. O. Thompson of the Texas Railroad Commission; and Dr. W. E. Wrather, director of the U. S. Geological Survey.

Dodge Offers Service Check

Purchasers of Dodge's B-3 series trucks may obtain free 1000-mile and 3000-mile service inspections and needed warranty replacements even while trucks are operating in distant states. Any Dodge dealer will conduct the inspections upon presentation of the warranty and service certificates received at the time of purchase. The new plan is available for any transient owner who requires this inspection while he is beyond a 50-mile radius from his selling dealer. The plan also includes Canadian built Dodge trucks operating in the United States.

Priority Indication Needed

When ordering limited quantities of maintenance, repair, and operating supplies it is advisable to use the priority rating under Defense Order 97. While the use of this rating is permissive, it is becoming increasingly difficult, if not impossible to obtain supplies without using it. The reason is that suppliers can only replenish stocks by giving evidence showing the final disposition of the goods.

Use of the form is simple. On every purchase order for items in limited supply indicate "DO-97 Certified Under NPA Regulation 4," and have an authorized employee sign each order.

Anyone using this rating becomes subject to the terms of regulation 4 which has established a quota system based on the user's recorded expenditures for 1950. If purchases exceed $1000 per quarter, records must be kept and made available for inspection by NPA officials.

Tax Declared Invalid

A recent ruling by the U. S. Supreme Court has made Connecticut's tax on corporate business not collectible from out-of-state firms whose business in Connecticut is strictly interstate in character. In a 6-3 decision, the Court stated that any tax imposed solely on the privilege of doing business in a state must be declared unconstitutional so long as the entire business of the foreign firm is interstate in character. It is believed by many legal authorities that this decision may have far-reaching effects on taxes imposed by other states.

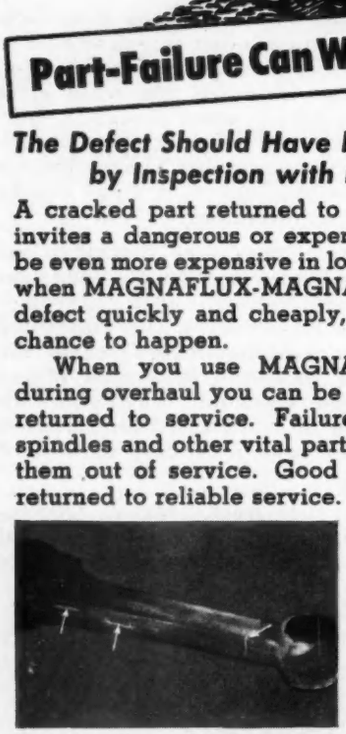
(TURN TO PAGE 260, PLEASE)

Part-Failure Can Wreck a Business, Too!

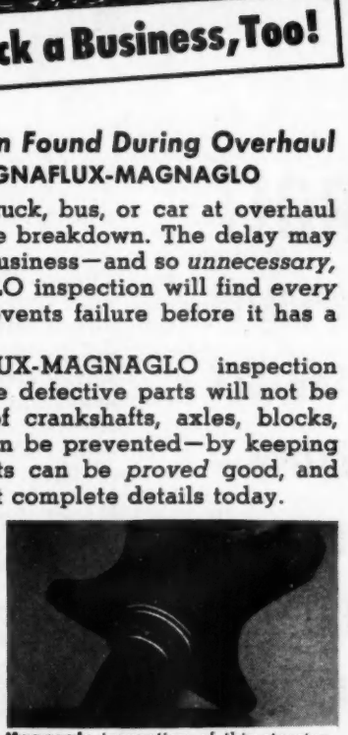
***The Defect Should Have Been Found During Overhaul by Inspection with* MAGNAFLUX-MAGNAGLO**

A cracked part returned to a truck, bus, or car at overhaul invites a dangerous or expensive breakdown. The delay may be even more expensive in lost business—and so *unnecessary*, when MAGNAFLUX-MAGNAGLO inspection will find *every* defect quickly and cheaply, prevents failure before it has a chance to happen.

When you use MAGNAFLUX-MAGNAGLO inspection during overhaul you can be sure defective parts will not be returned to service. Failures of crankshafts, axles, blocks, spindles and other vital parts can be prevented—by keeping them out of service. Good parts can be *proved* good, and returned to reliable service. Get complete details today.



Fluorescent Magnaglo indications mark the serious non-visible fatigue cracks in this connecting rod.



Magnaglo inspection of this steering spindle gives clear indication of otherwise invisible serious cracks that could cause failure.

FOR SAFETY... ECONOMY... RELIABLE SERVICE
Write today for complete information—for you, and the shop to serve you

**Magnaflux-Magnaglo® TradeMarks of Magnaflux Corporation applied to its equipment and materials for magnetic particle inspection.*

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5908 Northwest Highway, Chicago 31, Illinois
New York • Cleveland • Detroit • Dallas • Los Angeles
Export Distributor: Curtis Wright Corp. In Canada: Williams & Wilson, Ltd.

Tachographs

have helped us get better fuel and tire mileage and to establish *enviable safety records* *

***says**
Victor M. Jones
LEE & EASTES, Inc.

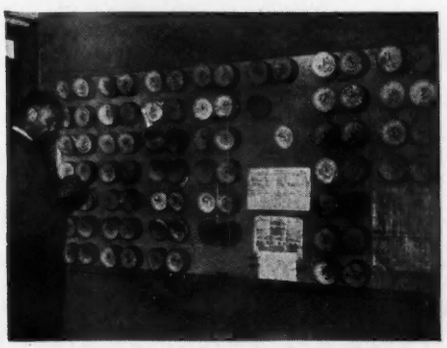
The vehicles in the fleet of Lee and Eastes travel over some of the toughest terrain in their over-the-road operations between the Pacific Coast and the plateaus of Oregon and Washington . . . through high altitudes, curves, steep grades—rain and snow. Well maintained rolling stock and skilled drivers are what it takes to move heavy loads safely and economically through these mountain passes—and Lee and Eastes have both.

To help their drivers and to keep an accurate check on their Diesel powered vehicles, each unit in their fleet is equipped with a model A Tachograph for m.p.h. and a model B Tachograph for engine r.p.m.

Charts record all Movements

At the start of the run a wax coated card disc is placed in each Tachograph. Automatically operated needle-like points (each called a stylus), scratch the wax to record all movements. The r.p.m. model registers and records engine revolutions to aid the driver in shifting gears on Diesel units. The m.p.h. model registers the speed, and records all movements of the vehicle—when engine started and how long it idled . . . when vehicle started to move . . . how fast it traveled . . . when vehicle stopped . . . and distance traveled between stops.

Photograph at right shows Mr. Victor M. Jones, Safety Director of Lee and Eastes examining Tachograph Charts. By studying these charts Mr. Jones knows just "what goes on" and what to do to correct any faults. With the aid of the information recorded on these charts this company has reduced maintenance costs . . . lessened the number of accidents . . . and has protected drivers from false traffic violation charges.



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Name and Position_____
Company_____
Address_____
City_____ State_____
We operate_____ (NUMBER) Vehicles

851-9

Fleets Recognized

Continued from Page 56

Western Milk Transport
Pacoima, Cal.

San Diego Transit Mixed Concrete Co.
San Diego, Cal.

Borden's Dairy Delivery Co.
San Francisco, Cal.

Pacific Gas & Electric Co.
San Francisco, Cal.

Texas Arizona Motor Freight, Inc.
Vernon, Cal.

Western Auto Transports, Inc.
Denver, Colo.

Rio Grande Motor Way Inc.
Grand Junction, Colo.

Connecticut Railway & Lighting Co.
Bridgeport, Conn.

The McFarland & Stample Trucking Co.
Hamden, Conn.

Water Bureau, Met. Dist.
Hartford, Conn.

Sussex Poultry Co., Inc.
Milford, Del.

Manhattan Company
Washington, D. C.

Chestnut Farms—Chevy Chase Dairy Co.
Washington, D. C.

Savannah Transit Co.
Savannah, Ga.

Alton Box Board Co.
Alton, Ill.

Archer Laundry, Inc.
Chicago, Ill.

Wagner Baking Corp.
Chicago, Ill.

Garden City Laundry
Chicago, Ill.

Industrial Cartage Co.
Chicago, Ill.

Reliable Packing Co.
Chicago, Ill.

American Can Co.
Maywood, Ill.

Great Western Laundry Co.
Chicago, Ill.

Perfection Biscuit Co.
Ft. Wayne, Ind.

Pauls Bread Co.
South Bend, Ind.

Shippers Dispatch
South Bend, Ind.

Iowa Ordnance Plant
Burlington, Iowa

H. & W. Motor Express, Inc.
Dubuque, Iowa

U. S. Post Office Garage
New Orleans, La.

Sewerage & Water Bureau
New Orleans, La.

M. J. Grove Lime Co.
Lime Kiln, Md.

Consolidated Gas, Electric Light & Power Co.
Baltimore, Md.

Blue Ridge Construction Co.
Hagerstown, Md.

Southern States Cooperative Inc.
Baltimore, Md.

The Davidson Transportation & Storage Co.
Baltimore, Md.

The Wm. Schluderberg-T. J. Kurdle Co.
Baltimore, Md.

S. S. Pierce Co.
Boston, Mass.

P. B. Matrie Motor Transportation, Inc.
Dorchester, Mass.

(TURN TO PAGE 132, PLEASE)

THE
BIEDERMAN
TRUCK

An All-Star Truck
Constructed of All-Star Units
Doing an All-Star Job Since 1920

DEALERS: Compare the Biederman National Standard Model with any truck on the market and you will agree that it is an All-Star team in itself.

Only the most sturdily constructed units of America's leading manufacturers are built into it.

Biederman Trucks win by performance. Inquiries regarding dealership solicited.

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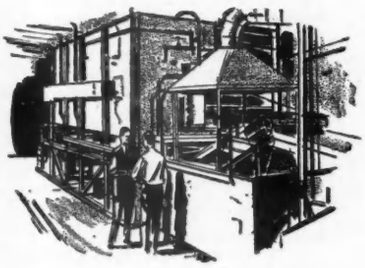
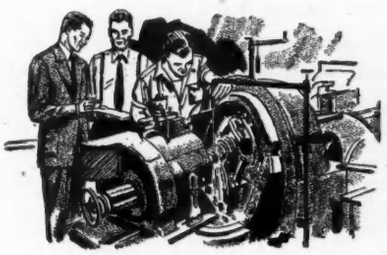
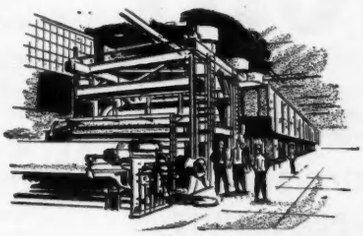
BIEDERMAN MOTORS CORPORATION
CINCINNATI 14, OHIO

Now! one-source help on every application of petroleum products:

GULF PERIODIC CONSULTATION SERVICE







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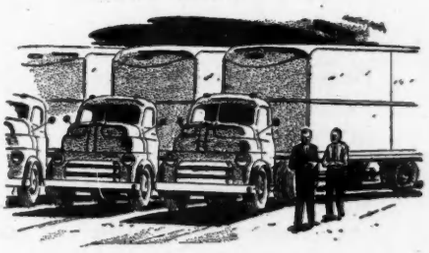
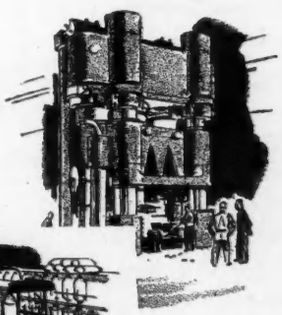
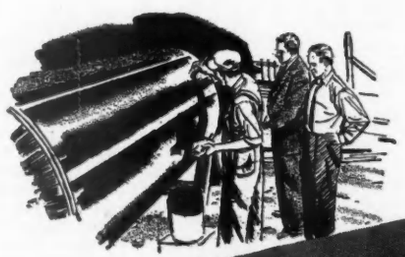
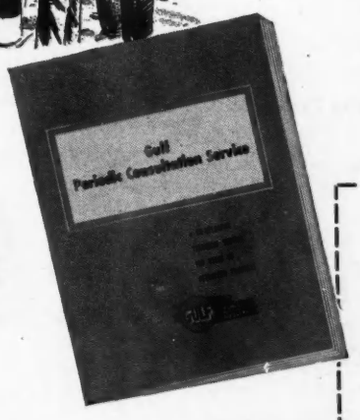
Through this advanced cooperative plan, Gulf makes available to you the regular counsel of one or more trained engineers, men who are skilled in every phase of petroleum science—men who have years of experience with practically every type of fleet operation.

This knowledge and experience can be applied profitably to your operating and maintenance problems. Send the coupon below for your copy of the booklet "Gulf Periodic Consultation Service," which describes this cost-saving service. Or contact your nearest Gulf office.









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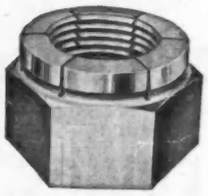
FLEXLOC

SELF-LOCKING NUTS



STAY

TIGHT

AFTER

171,360,000

VIBRATIONS AT 4000 CYCLES PER MINUTE...

Plain nuts with lock washers loosened after only ONE HOUR of 4000-cycle-per-minute operation on the vibrator of a concrete block machine at the plant of the Bethayres Concrete Block Co., Bethayres, Pa.

When FLEXLOC Self-Locking Nuts were installed, they were *still tight* when the machine was torn down for rebuilding after 6 weeks operation—at 4000 C.P.M., 17 hours a day, 7 days a week!

If you have an application where nuts loosen or back off, try FLEXLOC, the one-piece, all-metal STOP- and LOCK-NUT "that won't work loose."

Send for Bulletin 619-A today.

—SPS—

STANDARD PRESSED STEEL CO.

JENKINTOWN 5, PENNSYLVANIA

Fleets Recognized

Continued from Page 130

Boston Consolidated Gas Co.
Jamaica Plain, Mass.

Peoples Outfitting Co.
Detroit, Mich.

Detroit Creamery Co.
Detroit, Mich.

Dept. of Conservation
State of Michigan
Gaylord, Mich.

Chippewa County Road Commission
Sault Ste. Marie, Mich.

Indianhead Truck Line, Inc.
St. Paul, Minn.

Minnesota Highway Department, Dist. 2
Duluth, Minn.

Minn. Power & Light Co.
Duluth, Minn.

Northwestern Bell Telephone Co.
Minneapolis, Minn.

Northland Greyhound Lines, Inc.
Minneapolis, Minn.

Kansas City Power & Light Co.
Kansas City, Mo.

Kimball Lines, Inc.
Cape Girardeau, Mo.

The Chief Freight Lines
Kansas City, Mo.

Kansas City Public Service Co.
Kansas City, Mo.

Complete Auto Transit Inc.
St. Louis, Mo.

United Van Lines, Inc.
St. Louis, Mo.

Ralston Purina Co.
St. Louis, Mo.

Transportation Division, Yellowstone Park Co.
Gardiner, Mont.

Watson Bros. Transportation Co., Inc.
Omaha, Neb.

Public Service Co. of N. H.
Manchester, N. H.

Columbian Laundry
Newark, N. J.

N. J. Bell Telephone Company
Newark, N. J.

Brake Bakeries, Inc.
Irvington, N. J.

Dugan Brothers
Newark, N. J.

County of Sussex
Newton, N. J.

Hegeman Farms Corp.
Brooklyn, N. Y.

(TURN TO PAGE 136, PLEASE)

Budd Wheel Distributors
are ready to help you solve every tire problem!

AKRON—Motor Rim Manufacturers Co.
ALBANY—Wheels, Incorporated
ALBUQUERQUE—Wheels & Brakes, Inc.
ATLANTA—Harris Automotive Service, Inc.
BALTIMORE—R. W. Norris & Sons, Inc.
BIRMINGHAM—Wheel, Rim & Parts Co.
BOSTON—New England Wheel & Rim Co.
BUFFALO—Frey, the Wheelman, Inc.
CHARLOTTE—Carolina Rim & Wheel Co.
CHATTANOOGA—Harris Automotive Service, Inc.
CHICAGO—Stone Wheel, Inc.
CINCINNATI—Rim & Wheel Service, Inc.
CLEVELAND—Motor Rim Manufacturers Co.
COLUMBUS—Hayes Wheel & Spring Service
DALLAS—Southwest Wheel, Inc.
DAVENPORT—Stone Wheel, Inc.
DAYTON—Rim & Wheel Service, Inc.
DENVER—Quinn & McGill Motor Supply Co.
DES MOINES—Des Moines Wheel & Rim Co.
DETROIT—H. & H. Wheel Service, Inc.
EVANSVILLE—Auto Wheel & Rim Service Co., Inc.
FARGO—Wheel Service Company
FORT WAYNE—Wheel & Rim Sales Co.
GRAND RAPIDS—Rim & Wheel Service Co.
HARRISBURG—Standard Wheel & Rim Co.
HARTFORD—Connecticut Wheel & Rim Co.
HOUSTON—Southwest Wheel & Equipment
INDIANAPOLIS—Indiana Wheel & Rim Co.
JACKSONVILLE—Southeast Wheel & Rim Co.
KANSAS CITY—Borbein, Young & Co.
KNOXVILLE—Harris Automotive Service, Inc.
LOS ANGELES—Wheel Industries, Inc.
LOUISVILLE—Auto Wheel & Rim Service
MEMPHIS—Beller Wheel, Brake & Supply Co.
MILWAUKEE—Stone Manufacturing Co.
MOLINE—Mutual Wheel Co.
NASHVILLE—Beller Wheel, Brake & Supply Co.
NEWARK—Automotive Safety Inc.
NEW HAVEN—Connecticut Wheel & Rim Co.
NEW ORLEANS—Southern Wheel & Rim Co.
NEW YORK—Wheels, Incorporated
OKLAHOMA CITY—Southwest Wheel, Inc.
OMAHA—Morgan Wheel & Equipment Co., Inc.
PEORIA—Peoria Wheel & Rim Co.
PHILADELPHIA—Thomas Wheel & Rim Company
PITTSBURGH—Wheel & Rim Sales Co.
PORTLAND—Six Robblees', Inc.
PROVIDENCE—New England Wheel & Rim Company
RALEIGH—Carolina Rim & Wheel Co.
RICHMOND—Dixie Wheel Co., Inc.
ROCHESTER—Frey, the Wheelman, Inc.
SALT LAKE CITY—Henderson Rim & Wheel Service
SAN ANTONIO—Southwest Wheel & Equipment
SAN FRANCISCO—Wheel Industries, Inc.
SEATTLE—Six Robblees', Inc.
SOUTH BEND—Wire & Disc Wheel Sales & Service
SPOKANE—Bearing & Rim Supply Co.
SPRINGFIELD, ILL.—Illinois Wheel & Rim Co.
SPRINGFIELD, MO.—Borbein, Young & Co.
ST. LOUIS—Borbein, Young & Co.
ST. PAUL—Wheel Service Co.
SYRACUSE—Colbourn Wheel & Rim Service, Inc.
TACOMA—Six Robblees', Inc.
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TORONTO—Wheel & Rim Co. of Canada, Ltd.
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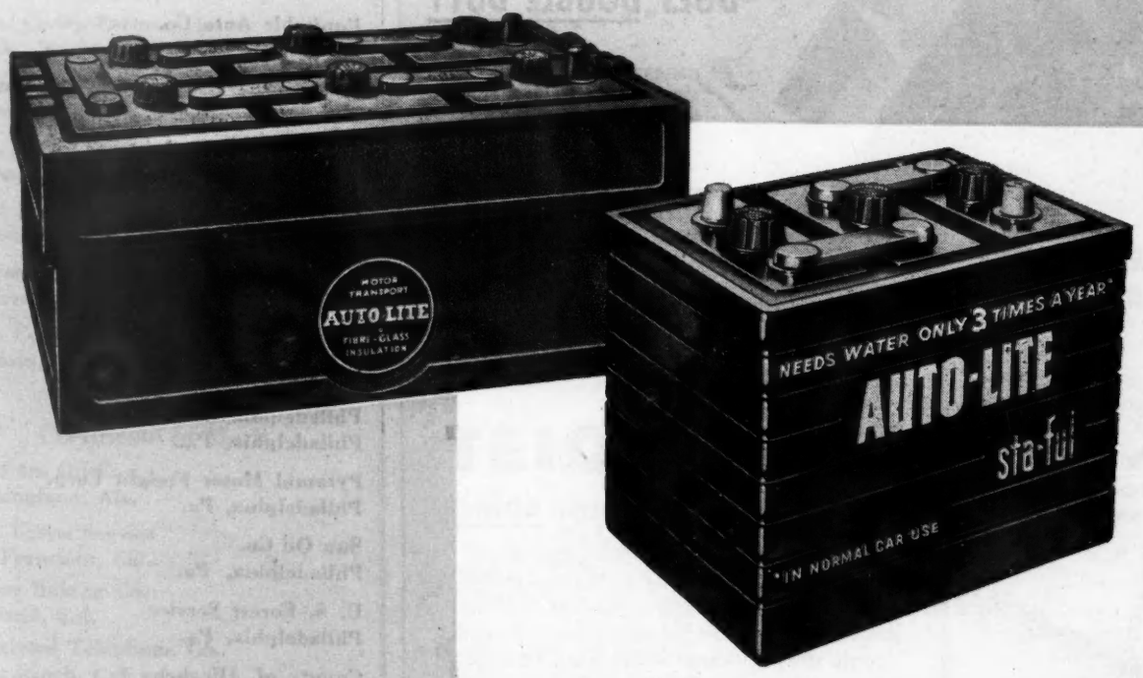
WINNIPEG—Ft. Garry Tire Service Ltd.

"I ALWAYS THOUGHT that if any automotive company wanted a tough test for their equipment they should try it out on a fleet of heavy-duty trailer trucks—like the 37 in our employ.

"Our trucks have to maintain a definite schedule on both short and long distance trips and operate in all kinds of weather, with temperatures down to sub-zero—rugged test for men and equipment.

"Batteries take a beating all along the line in our business, and I'm happy to say our Auto-Lite equipped trucks have stood up exceptionally well, and in every instance have more than met the high standards we expect of all our equipment."



AUTO-LITE batteries

ERE IS AN AUTO-LITE BATTERY FOR EVERY USE — CARS • TAXICABS • TRUCKS • BUSES • TRACTORS • DIESEL MOTORS

Fleets Recognized

Continued from Page 132

Liebmann Breweries, Inc.
Brooklyn, N. Y.

Motor Haulage Co., Inc.
Brooklyn, N. Y.

Iroquois Beverage Corp.
Buffalo, N. Y.

John J. Casale, Inc.
New York, N. Y.

Rochester Gas & Electric Corp.
Rochester, N. Y.

Madison County, Department of Highways
Wampsville, N. Y.

Department of Public Works
Supv. Div. of Streets Garage
Buffalo, N. Y.

Red Top Brewing Co.
Cincinnati, Ohio

The Cincinnati & Suburban Bell Telephone Co.
Cincinnati, Ohio

City of Cincinnati, Municipal Garage
Cincinnati, Ohio

Purity Bakeries Corp.
Cincinnati, Ohio

The Rubel Baking Co.
Cincinnati, Ohio

Standard Oil Co.
Cleveland, Ohio

Ward Baking Co.
Cleveland, Ohio

Anderson Haulage Co.
Columbus, Ohio

The Ohio Oil Co.
Findlay, Ohio

Alfred Nickles Bakery, Inc.
Navarre, Ohio

The Cincinnati Gas & Electric Co.
Cincinnati, Ohio

Ohio Bell Telephone Co.
Steubenville, Ohio

Isaly Dairy Company
Youngstown, Ohio

Hudson-Duncan & Co.
Portland, Ore.

Pierce Freight Lines, Inc.
Portland, Ore.

Oregon State Highway Commission
Salem, Ore.

Equitable Auto Co.
Pittsburgh, Pa.

Mushroom Transportation Co., Inc.
Kennett Square, Pa.

Braun Baking Co.
Pittsburgh, Pa.

Penn Dairies, Inc.
Lancaster, Pa.

King Farms Co.
Morrisville, Pa.

Starkey Farms Co.
Morrisville, Pa.

Philadelphia Coke Co.
Philadelphia, Pa.

Pyramid Motor Freight Corp.
Philadelphia, Pa.

Sun Oil Co.
Philadelphia, Pa.

U. S. Forest Service
Philadelphia, Pa.

County of Allegheny
Pittsburgh, Pa.

Hertz Drivurself System
Reading, Pa.

McCrady-Rodgers Co.
Pittsburgh, Pa.

Philadelphia Suburban Transportation Co.
Upper Darby, Pa.

Auto Rental Co.
Pittsburgh, Pa.

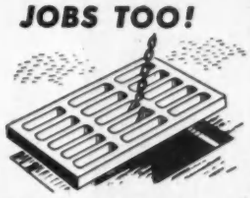
Here's a Way to **HOIST** *Sales on All*

CITY, STATE AND COUNTY MAINTENANCE TRUCKS!

DUBÉ

DOES DOUBLE DUTY

DOES THESE JOBS TOO!



*LIFTS CATCH BASIN GRATES AND MANHOLE COVERS

PULLS UP CURBSTONE

THE RUGGED, 100% MECHANICAL

DUBÉ HOIST

WITH POWER UP AND POWER DOWN

DUBÉ makes a big hit with buyers of trucks for city, county and state road maintenance work. Does a smoother, better job on all spreading operations . . . and double duty on tough lifting jobs. Positive power UP and DOWN assures instant control at all times.

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DETROIT 16 • MICHIGAN

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Providence, R. I.

New England Bakery
Pawtucket, R. I.

The Mason & Dixon Lines, Inc.
Kingsport, Tenn.

Tennessee Valley Authority
Knoxville, Tenn.

Foremost Dairyland, Inc.
Ft. Worth, Tex.

Brown Express
San Antonio, Tex.

Texas Highway Department
Yoakum, Tex.

Ball Bros. Glass Co.
Wichita Falls, Tex.

Collett Tank Lines
Salt Lake City, Utah

Virginia Department of Highways
Suffolk, Va.

U. S. Bureau of Reclamation
Department of Interior
Coulee Dam, Wash.

Pacific Coast Coal Co.
Seattle, Wash.

Seattle Gas Co.
Seattle, Wash.

Wash. Co-Op Farmers Assoc.
Seattle, Wash.

Mt. Rainier Ord. Depot
Tacoma, Wash.

U. S. Forest Service
Elkins, W. Va.

Pabst Brewing Co.
Milwaukee, Wisc.

Jefferson County Highway Department
Jefferson, Wis.

State Conservation Department
Madison, Wis.

Certificate of Merit

The Pure Oil Co.
Birmingham, Ala.

U. S. Forest Service
San Francisco, Cal.

Remar Baking Co.
Oakland, Cal.

Associated Telephone Co.
Long Beach, Cal.

Carnation Company
Los Angeles, Cal.

City of Los Angeles
Dept. of Water & Power
Los Angeles, Cal.

Southern California Gas Co.
Los Angeles, Cal.

Knudsen Creamery Co. of Maint.
Los Angeles, Cal.

Public Service Co. of Colorado
Denver, Colo.

G. Fox & Co., Inc.
Hartford, Conn.

Delaware Power & Light Co.
Wilmington, Del.

Florida Power & Light Co.
Miami, Fla.

U. S. Forest Service
Atlanta, Ga.

Georgia Power Co.
Atlanta, Ga.

The Cudahy Packing Co.
Chicago, Ill.

Mueller Company
Decatur, Ill.

Illinois Commercial Telephone Co.
Springfield, Ill.

Midland Electric Coal Corp.
Farmington, Ill.

City of Chicago Bureau of Sts.
Equipment Service Division
Chicago, Ill.

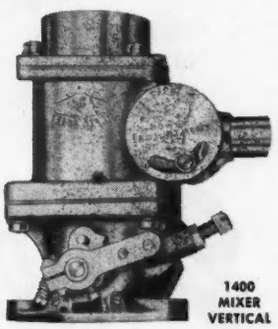
Indianapolis Power & Light Co.
Indianapolis, Ind.

Omar Bakery
Indianapolis, Ind.

(TURN TO NEXT PAGE, PLEASE)

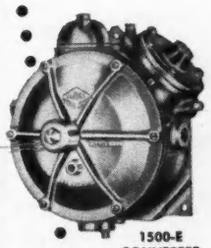
ALGAS BUTANE-PROPANE
CARBURETION CONVERSION EQUIPMENT

Brings More *Low Cost* Motor Power

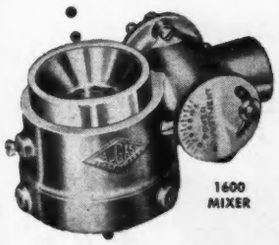


1400 MIXER VERTICAL

PRECISION ENGINEERING MARKS ALGAS EQUIPMENT AS BEST IN THE FIELD



1500-E CONVERTER (ELECTRIC PRIMER)



1600 MIXER

ALGAS equipment brings you all the advantages of LP-Gas operation plus many extra engineering advancements that put it far ahead in operation, economy and durability.

ALGAS equipment is engineered to meet the exact specifications of each kind of engine, to assure maximum efficiency of operation.

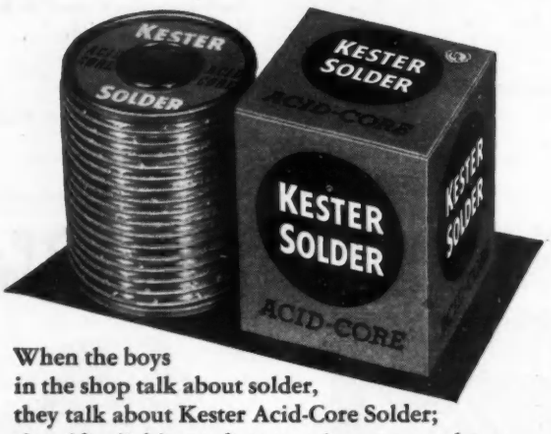
ALGAS equipment on your engines means more LOW COST motor power... longer engine life and greater time between motor overhauls.

Pioneers in the Butane-Propane field, American Liquid Gas Corporation offer a background of over 18 years experience. This is your assurance that the ALGAS equipment you buy will be correctly engineered for your job. Write today for further information.

BUTANE ALGAS PROPANE NATURAL GAS

AMERICAN LIQUID GAS CORPORATION
1109 Santa Fe Avenue
Los Angeles 21, California

Kester Solder



When the boys
in the shop talk about solder,
they talk about Kester Acid-Core Solder;
the old reliable product now in a new package.

Easier to Use

Mechanics know that using Kester makes any soldering job easier. Kester contains the finest grades of tin and lead commercially available. The fluxes are chemically and scientifically correct.

Faster

Kester is faster to use. Mechanics prefer it and are more satisfied when using it. The work is speeded up and output is increased.

Kester Solder Company
4201 Wrightwood Ave., Chicago 39
Newark, N. J. • Brantford, Canada

KESTER SOLDER

The Mechanics Standard since 1899

Fleets Recognized

Continued from Page 137

West Baking Co.
Indianapolis, Ind.

WCF & NRR
Waterloo, Iowa

City of Davenport
Davenport, Iowa

Altstadt & Langlas Baking Co.
Waterloo, Iowa

Green Spring Dairy
Baltimore, Md.

Sherwood Brothers Inc.
Baltimore, Md.

Comm. of Mass., Dept. of Pub. Wks.
Boston, Mass.

Middlesex & Boston Street Ry. Co.
Waltham, Mass.

Federal Tea Co.
Springfield, Mass.

Michigan Dept. of Conservation
Marquette, Mich.

Michigan Consolidated Gas Co.
Grand Rapids, Mich.

Associated Truck Lines Inc.
Grand Rapids, Mich.

Michigan Consolidated Gas Co.
Detroit, Mich.

Hertz Driv-ur-Se'f Station
Flint, Mich.

Ebling Creamery Co.
Detroit, Mich.

Bordens Farm Products Co. of Michigan
Detroit, Mich.

Evening News Association
Detroit, Mich.

Moland Bros. Trucking Co.
Duluth, Minn.

International Milling Co.
Minneapolis, Minn.

Northland Milk & Ice Cream Co.
Minneapolis, Minn.

Hy-Grade Water & Soda Co.
St. Louis, Mo.

Southwestern Bell Telephone Co.
St. Louis, Mo.

The Cudahy Packing Co.
Omaha, Neb.

Inland Construction Co.
Omaha, Neb.

Union Transfer Co.
Omaha, Neb.

J. E. Faltin Motor Transportation
Manchester, N. H.

The Lansdell Co.
Hackensack, N. J.

American Can Co.
Jersey City, N. J.

(TURN TO PAGE 140, PLEASE)

CAPT. EASY Says:

ALL STEEL • EASY TO ASSEMBLE
MINIMUM FLOW RESTRICTION
POSITIVE LEAKPROOF CONNECTION

WEATHERHEAD OFFERS A COMPLETE LINE OF HOSE AND REUSABLE HOSE ENDS

H-17—Two-ply braided fabric, synthetic cover

H-108—Single-wire braid, synthetic cover

H-25—Double-wire braid, synthetic cover

H-69—Single-wire braid, cotton cover

H-9—One-ply braided fabric, synthetic cover

You can service all heavy-duty equipment, yet keep your stock to a minimum, the EASY Weatherhead way!

EASY to assemble . . .

Hose assemblies can be made up as needed using ordinary bench tools. No special equipment required.

EASY to stock . . .

No need to carry a big inventory of made-up hose-and-fitting assemblies. Keep hose in bulk, cut and assemble with hose ends as needed.

EASY on your costs . . .

You save because you keep inventory to the bone—just hose and necessary hose ends. And you save because Weatherhead hose ends are REUSABLE!

The EASY line to handle is...

The Mark of Quality

WEATHERHEAD

ON EVERY CAR !

Fleets Recognized

Continued from Page 138

The Texas Company
Buffalo, N. Y.

Koppers Co. Inc.
New York City, N. Y.

Railway Express Agency, Inc.
Albany, New York

Red Star Express Lines Inc.
Auburn, N. Y.

N. Y. Naval Shipyard
Brooklyn, New York

Pittsburgh Plate Glass Co.
Brooklyn, New York

Buffalo General Launderies Corp.
Buffalo, New York

City of Buffalo
Department Motor Vehicles of Parks,
New Barn, Delaware Pk.
Buffalo, New York

International Railways Co.
Buffalo, New York

Breyer Ice Cream Co., Inc.
Long Island City, New York

P. H. Dietz Coal Co. Inc.
Ridgewood, Brooklyn, N. Y.

Metropolitan News Co.
New York, New York

Quality Bakers of America Corp., Inc.
New York, New York

Stahl-Meyer, Inc.
New York, N. Y.

City Delivery & Storage Corp.
Rochester, New York

Columbus Retail Merchants Del. &
R.M.D., Inc.
Columbus, Ohio

Doran Trans. & Rigging Co.
Cincinnati, Ohio

Dowell, Inc.
Tulsa, Okla.

Bell Telephone Co. of Pa.
Pittsburgh, Pa.

Reading Transportation Co.
Reading, Pa.

Ward Baking Co.
Pittsburgh, Pa.

J. N. Taub & Sons
Houston, Texas

Virginia Transit Co.
Richmond, Va.

Seattle Disposal Co.
Seattle, Wash.

Public Roads Administration
Vancouver, Wash.

City of Milwaukee, Municipal
Equipment
Milwaukee, Wisc.

Omar Bakeries Inc.
Milwaukee, Wisc.

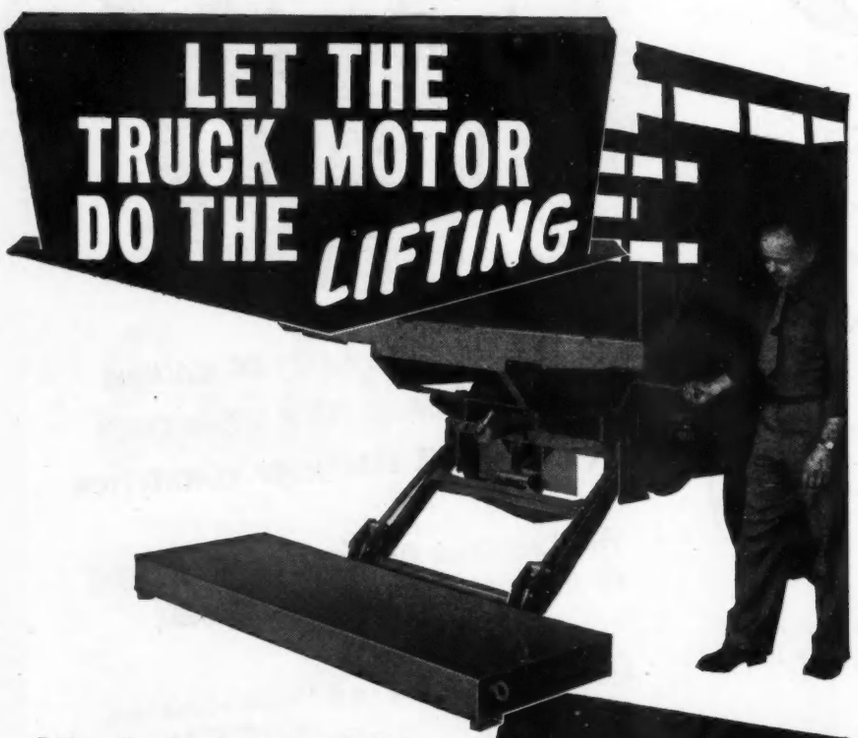
The large number of fleets to whom these awards were made is an excellent indication of the quality of the maintenance job the Board members are doing. Two hundred fleets representing 40 per cent of the Board's membership, have been presented with appropriate certificates.

The intimate and detailed information obtained from the replacement parts life surveys presented an unusual opportunity to make awards on the most honest basis possible—bare unvarnished facts. Because no competitive conditions were established, as is the case when contests are conducted, COMMERCIAL CAR JOURNAL editors believe these fleets truly deserve highest recognition.

Origin of Board of Experts

WHO are the "Experts?" How did the Board originate? What is its function? How does the Board operate? How does one become a member? These are a few of the many questions that have been asked concerning this outstanding group of maintenance men.

(CONTINUED ON PAGE 144)



Lifts the load (up to 2,000 pounds) from ground to truck—or lowers it from truck to ground—in a matter of seconds. Can be stopped instantly on way up or down and held securely. Requires only one man!

Easily installed on most any truck or semi-trailer — weighs approximately 700 pounds complete with mounting accessories.

Reasonably priced! Send now for details. Include description of your truck.

IT'S THE NEW MONEY-SAVING CEMCO Hydraul-lift TAILGATE

By the makers of CEMCO Trailer Jockeys, CEMCO Split-shaft Power Takeoffs, and CEMCO Underbody and Vertical Hoists

CEMCO INDUSTRIES, INC.,
GALION, OHIO

Says:

GATES TRUCK BELTS

"Have cut our belt costs by 75% and we have no road delays"

The *written* statements of well known fleet operators—like United Truck Lines, Inc., of Spokane, Wash.—tell a story of real importance to every operator who cares about reducing his costs and increasing his profits.

We have similar statements from many, many big operators. And these statements are all made by *practical* men—General Managers of Fleets—Purchasing Agents—Superintendents of Maintenance—men who know from *experience* just how important a good truck belt is in keeping trucks on schedule, in avoiding costly delays, in reducing operating costs—in getting shipments delivered *on time* and *at a profit!*

These men know, as you do, that a truck belt is really a most important part of the motor. No truck can run without a belt. And, while the belt's initial cost is small, it can cost a lot of dollars if at some critical moment it fails and holds the truck idle while a road service call is made.

Saving Road Delays Pays Big Dividends

Ask any user of Gates Truck Belts and they will tell you they are cutting their *belt costs in half*—or more—due to the much longer service given by these specially engineered belts. They will also emphasize particularly the *even greater* savings these belts give them by cutting down road delays and thus increasing priceless *operating time*—the only thing that pays them (or you) a profit.

We believe that you will want to consult some of these users. That is why we publish (on the preceding page) several of their names. You will surely notice one or two whom you know and can question in full confidence. Let their experience convince you that you, too, can profit by using the belt that is specially engineered for Trucks and Buses—the GATES TRUCK BELT.

Gates Belt Jobbers in Every Distributing Center Can Supply You Promptly

REG. U. S. PAT. OFF.

T-515

Look for This T*

Look for the letter "T" on the belt itself—as well as on the label of every belt you buy for truck service. "T" means that the belt has been specially engineered for TRUCKS and BUSES. You can be sure of getting the belt designed for this more demanding service only by seeing to it that you are delivered belts which bear this letter "T".

Fleets Recognized

Continued from Page 140

The Board of Experts was organized five years ago. Its nucleus comprised maintenance superintendents of some of the most progressive fleets with whom COMMERCIAL CAR JOURNAL's editors were in more or less constant personal contact throughout the years. By their progressive techniques, this group helped change truck maintenance from hit-and-miss methods to well-organized procedures that brought better operation and lower costs to the growing truck transportation industry.

Thus, five years ago, CCJ editors decided to enlarge this circle of top grade fleetmen and arrange for periodic exchange of information, ideas and suggestions. This not only would increase the scope of information available for all CCJ readers, but it would serve as a guide for the editors' policies.

To expand the small and select group of top-bracket fleetmen was a problem that could not be approached easily, quickly or haphazardly. It was decided, for example, that the enlarged group should provide a true cross section of the transportation industry, including private as well as common carriers. Moreover, it was considered essential to have every vocation among the private carriers represented in direct proportion to its numerical group nationally. To be true spokesmen for their industries, these fleets also had to represent all fleet size groups in similar proportion.

The editors personally contacted a number of these fleets to determine if they would care to establish a united, organized group that could be accepted by the industry as its representative, with respect to common problems. The idea was greeted with enthusiasm.

Having thus been encouraged and advised to proceed, CCJ editors went through a list of over 25,000 fleets and compiled groups of names that would meet the outlined conditions. The editors then wrote letters to the hand-picked fleets, explained the idea, and extended an invitation to their fleet maintenance superintendents to become part of the select group. More than 50 per cent accepted.

More Accurate Fleet Studies

BECAUSE the approach to the organization of the Board of Experts was planned to provide proportional representation of the respective vocations and fleet size groups, the Board may be regarded as an ideal source of fleet information.. This is not the case when fleet studies or surveys are made on any other basis.

Uncontrolled sources of information may contain as many as a dozen or more replies from a single fleet. Such multiple representation outweighs and outbalances single reports from other fleets. It results in a poll of individual opinion—ranging from the man at the gas pumps to the fleet superintendent—rather than one authentic report of one fleet's maintenance practices.

This does not preclude representation from branches of large fleets. A fleet having its main shop in or near Chicago may employ different methods from its southern terminal in New Orleans. Each terminal can be considered a separate fleet maintenance organization; with policies generally alike but with radically different labor problems, temperature conditions, sources of supply, and so on— all affecting maintenance practices.

Membership by Invitation Only

IN THE interest of survey accuracy, and to insure that desirable proportional industry representation, the

The Servis Recorder Was Opened Yesterday at 12:30 . . .
. . . and You Can Put Your Finger Right On It!
NOON
The Little Dot Shows It . . .
The Servis Recorder now tells:
When it was Locked!
When it was Unlocked!
It took years for us to figure this out.
By that we mean to figure it out the right way.
It had to be simple and trouble-proof. It had to mean: no extra work for the supervisor.
It had to be automatic . . . It is.
All present models have this feature.
Meanwhile, the Servis Recorder keeps on with its main function, now more necessary than ever:
By planning, supervising, organizing and getting real time information—
To get more Productive Work out of Existing Equipment. (It's needed right now.)
Here's a Stop of 2 Hours
POINTS OUT ALL DELAYS
Send for the full story. The Service Recorder Co., 1375 Euclid Avenue, Cleveland 15, Ohio.
The Servis Recorder
Tells Every Move Your Truck Makes

Board of Experts will remain a "closed corporation"—with membership by invitation only.

The Board will grow as the industry grows. It always will welcome constructive assistance and cooperation within the bounds of its organization and the scope of its policies.

How Surveys Originate

THERE is no outside influence in the type of problems considered by CCJ's Board of Experts. Each communication between CCJ editors and Board members includes this question: "What problems would you like the Board to study next?" Replies are tabulated and the subject mentioned by the greatest number of members is selected for the next study. Thus by majority vote, the members always control each study. COMMERCIAL CAR JOURNAL's editors merely compile and publish the data.

Bus Fleets to Be Segregated

IN THE past, maintenance studies were divided into 26 vocational categories. These, in turn, were regrouped for publication into the 10 groups found in every table published; except in a few cases where a greater breakdown was found necessary to tell the story accurately. Time has proved the value of these breakdowns, despite the fact that it often entails a great burden on the staff.

For example, it was generally conceded that the problems of fleet maintenance were essentially the same. COMMERCIAL CAR JOURNAL's editors maintained that this was not necessarily true. They agreed that retail bakery and dairy fleets, for example, have much in common, but there is a tremendous difference between these operations and those of over-the-road common carriers.

A case in point is such a basic maintenance operation as brake relining. A recent Board of Expert's survey showed that, as a national average for all types of vehicles and all fleet vocations and sizes, riveted brake linings gave 35,301 miles of service. To let that figure stand would make most of the bakery and dairy fleets very unhappy, but greatly please common carriers. The former might start a wave of complaints against the lining manufacturers, the latter might be lulled into a false sense of security and superiority.

Breakdowns of brake lining life information showed that—considering the frequent stop-start nature of the bakeries and dairies—a satisfactory average for those fleets was not 35,301 miles but, rather, 29,673. The common carrier whose records showed, say, 40,000 miles of service, had nothing to crow about because the average for his vocational group was 52,821. Instead, he had better determine why his average was below those in his vocation.

This seems to prove that one average performance figure, without taking into account vocational differences, is entirely worthless.

It is this understanding of fleet problems that prompts COMMERCIAL CAR JOURNAL to make one change in the Bus Fleet group. Heretofore, these fleets were grouped as "Truck and Bus Fleets, Mixed." This was to designate that all vehicles in a given bus property were consolidated. Hereafter, they will be designated as Bus Fleets, and the trucks and other vehicles in their fleets will not be included in the studies.

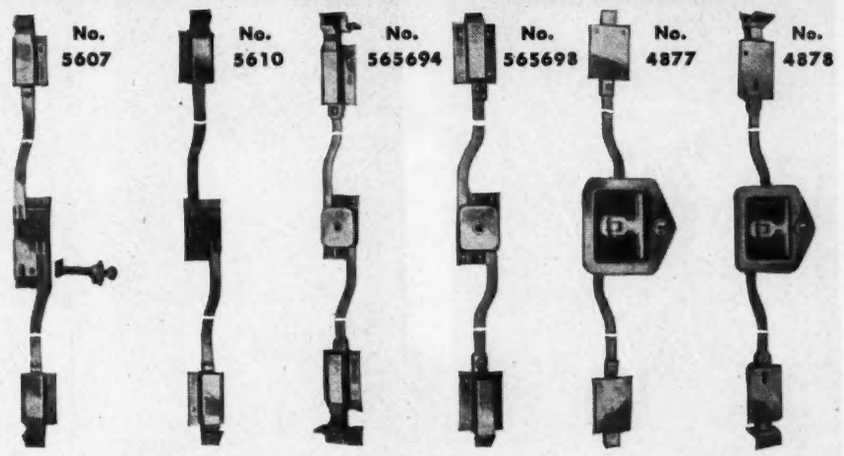
Awards to Continue

ANOTHER change in the basic policy and operation of the Board of Experts is the plan to continue recognition of top-quality maintenance practices. The same general plan employed for the 1950 awards will prevail for the future. There will be no specific goals

(TURN TO PAGE 148, PLEASE)

EBERHARD slam locks

SAVE MILLIONS OF DELIVERY MINUTES



JUST *Slam* THE DOOR *and they* LOCK

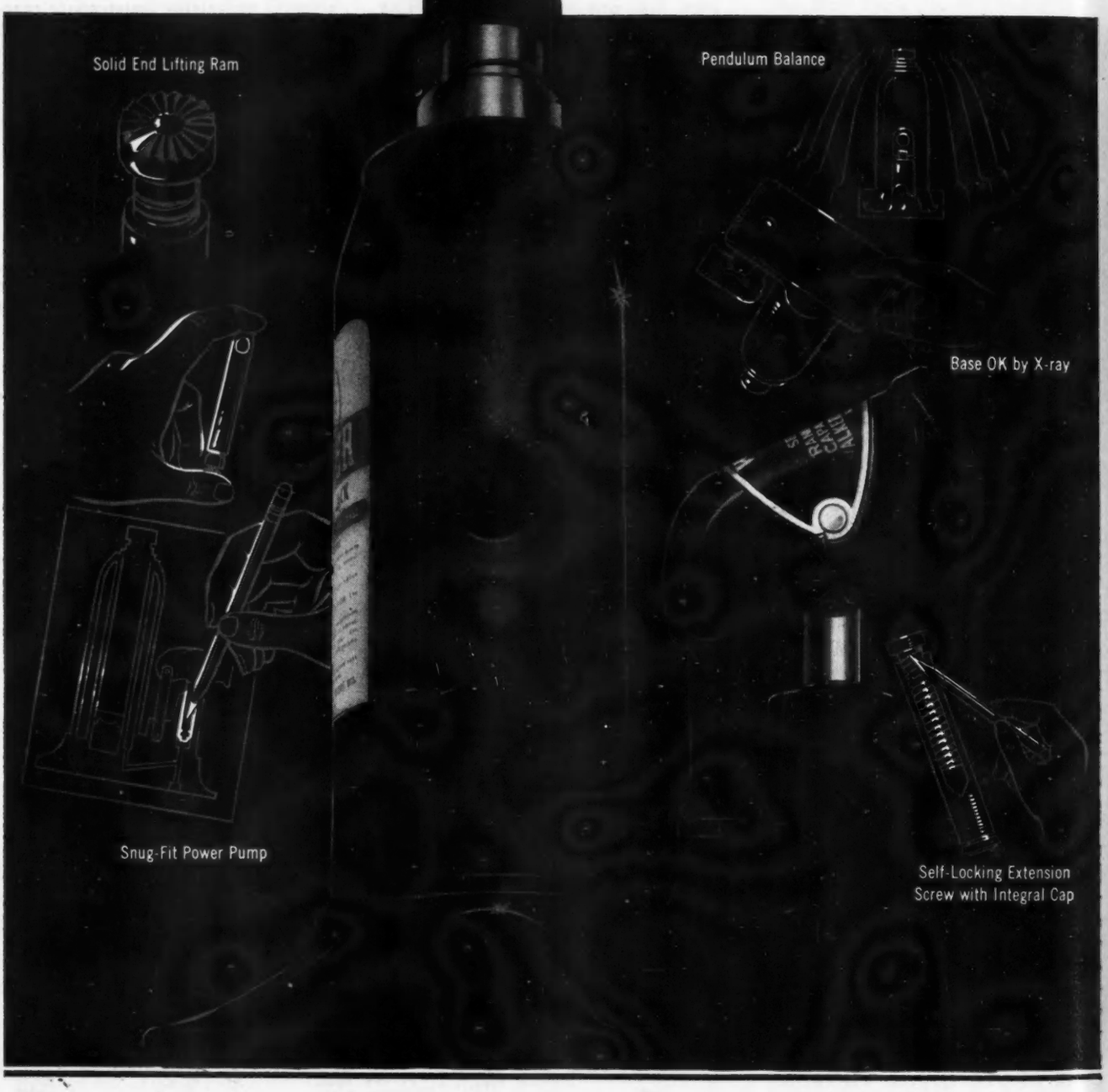
With Eberhard "slam" locks the driver simply opens the door—removes his package and "slams" the door with knee or elbow.
Seconds saved each time multiply into minutes and minutes into valuable "man-hours."
Nos. 5607 and 5610 locks are for *heavy* doors. Nos. 565694 and 565698 for *medium* doors. Nos. 4877 and 4878 "Recesso" locks (with recessed folding handles for compartment doors of tank and utility bodies).
All locks latch when doors are "slammed." Nos. 5607, 5610, 565694, 4878 —"SLAMTITE" also pull doors tightly against jambs. Nos. 5607, 4877 and 4878 all "latch" and "lock" upon being slammed — offering protection to the loads.
You can use these locks profitably. Write for complete information.

No. 4879—PADDLE HANDLE RECESSED DOOR LOCK
Slam latching action

EBERHARD *Long Run* TRUCK BODY FITTINGS

EBERHARD MANUFACTURING CO.
Division of the Eastern Malleable Iron Co. EVARTS AVENUE CLEVELAND, OHIO

World's most modern *Portable* hydraulic .



WALKER

.... WALKER *Series* 900

Nowhere else can you find such features as

Pendulum Balance · Rhyth-Matic Valve Action
Micro-Accurate Release
8 great models · 1½ to 50 tons capacity

● Here is the portable hydraulic proved in performance, dependability, safety . . . proved on the road and in the shop . . . proved throughout its entire range of models and capacities. Here is the portable hydraulic famous not only for its finer precision manufacture, but for its smooth, fast, dependable operation and its rugged streamlined construction.

The Walker Series 900 is truly modern . . . modern with its "Projectile" tank, designed in the shape of a heavy armor piercing shell to withstand greater shock and distribute the weight uniformly . . . modern all the way to its rugged malleable iron base and pump barrel, X-ray tested against imperfections. Over a period of many years, Walker has continually developed such significant refinements and improvements in a never-ending quest for true jack perfection.

Whatever your needs, there's a Walker Series 900 Portable Hydraulic to handle the job with speed and safety and with strength aplenty to give you the finest dollar-for-dollar value in the field today.

WALKER MANUFACTURING CO., OF WISCONSIN · RACINE, WISCONSIN

Makers of Walker Jacks, Exhaust Silencers, Oil Filters and Electric Lifts

Leads in Jacks

Fleets Recognized

Continued from Page 145

for the fleets to meet. Maintenance studies will be thorough and complete. They will be made throughout the year, to preclude the possibility of emphasizing any one phase or distinctive feature of a fleet's maintenance program.

How to Identify a Member

IN ADDITION to sharing the awards, members of COMMERCIAL CAR JOURNAL's Board of Experts have a means of identifying themselves. Membership cards have been mailed to all Board members. They will be renewed from year to year to identify their active status.

END

Please Resume Reading Page 58

Fire Losses Show Increase

Large-loss fires have increased about 12 per cent in 1950, according to a recent report released by the National Fire Protection Assn. of Boston. The report covered fires in the United States and Canada where the damage exceeded $250,000. The fires surveyed caused 26 per cent more damage, the report stated.

Here is a table showing the sharp increase in the number of large-loss fires in manufacturing plants in 1950 and a substantial decrease in the number of fires in warehouses.

As in previous years, over 60 per cent of all fires occurred during the hours of darkness. Half of the large fires occuring in the manufacturing plants originated during operating periods when detection was presumably prompt. This fact indicates that any investment made for prompt extinguishment, such as automatic protection and organization of employees into effective fire brigades, is amply justified.

More than 1/3 of the fires occurred in towns having less than 5000 population or in locations outside city limits in contrast with the less than 20 per cent that occurred in cities of over 100,000 population. The comparatively weak fire protection service noted in many small communities explains in part the disproportionately large number of fires in small towns.

As in 1941, 2/3 of these serious fires were first reported by telephone, 15 per cent by box alarm. 61 per cent of the fires started from unknown causes, 68 per cent of the fires of known cause could have been prevented if the hazard responsible for the fire had been properly safeguarded.

Geographically these large-loss structural fires occurred in 40 of the 48 states, Hawaii and Alaska and in six Canadian provinces. The largest number occurred in Calif. California which suffered 19 of these "biggest of the year" fires. Pennsylvania and Illinois each had 15, New York State 14, Ohio 13. Canada sustained 23 of the major structural losses.

"PRESTONE" BRAND AMERICA'S No. 1 ANTI-FREEZE—

Order Now... prepare for another big season!

WORLD'S BEST PROTECTION...

- against freeze-ups
- against rust
- against clogging
- against foaming

WILL NOT LEAK OUT OF A COOLING SYSTEM TIGHT ENOUGH TO HOLD WATER!

NO OTHER ANTI-FREEZE GIVES THE SAME DEGREE OF PROTECTION!

YOURS WITHOUT COST!

VALUABLE DEALER HELPS KIT

Doesn't cost you a cent when you place your pre-season order! Get the big new banner! Vivid streamers! Striking window display! Manual of Cooling System Service! 1951 "Prestone" anti-freeze protection chart with newest data, including late-model cars!

LIST PRICE
$3.75 PER GAL.
$1.00 PER QT. IN CANS

The registered trade-marks "Prestone" and "Eveready" distinguish products of
NATIONAL CARBON COMPANY
a Division of
UNION CARBIDE AND CARBON CORPORATION
30 East 42nd Street, New York 17, N. Y.

Conference Corner

Continued from Page 6

"2. Driver complaints reduced 12 to 15 per cent.

"3. Average road call reduction on a per unit basis—20 per cent.

"These improvements were obtained in one of the country's most efficiently maintained fleets and was the result of proper dynamometer organization. Each fleet differs as to operating conditions, quantities and types of vehicles, shop layout and procedures. Therefore, organization of a dynamometer into a specific fleet operation is an individual problem. However, the following breakdown of dynamometer operation time obtained from a recent national survey of Clayton Dynamometer users, may be used as a general guide to determine the advisability of incorporating a chassis dynamometer into a fleet operation.

"Daily dynamometer use schedule—Using daily average number of repair orders and periodic inspections as a basis.

"1. Allow 20 to 40 minutes, depending on complication of vehicle, for each complete diagnosis. Add up the time it will take each day to diagnose all vehicles suspected of needing repair on engine and drive system. Add five minutes for those that only require spot checking of a specific complaint.

"2. Figure an average of 13 minutes for 'after repair' checking and final adjustments.

"3. Compute periodic inspection time at 20 minutes per vehicle.

"4. The total is the daily dynamometer time required. Add 10 per cent for contingencies, then divide this total by the number of hours per day the dynamometer could be used and the answer is the number of chassis dynamometers needed for a complete program.

"If the period of dynamometer use adds up to one and a quarter hours per day, it is enough to warrant consideration. If three hours a day is the answer, the chassis dynamometer will definitely pay dividends.

"In many fleets, the chassis dynamometer is coordinated with an engine dynamometer. Use of an engine dynamometer as a service tool permits run-in, checking of the complete engine and accessory assembly, final adjustments, and rework prior to its installation in a vehicle. Maintenance of road schedules possible with dynamometer run-in engines is considered by all fleets using such a program as a great convenience and a dollar-saver."

R. O. Babcock, of Consolidated Edison says

"Our two dynamometers cost about $15,000 apiece but definitely pay off if volume is sufficient to keep them busy at least eight hours a day. We found at least 30 per cent of the fleet was sub-standard on the initial test. With their use we have been able to increase average inspection period from three weeks to six weeks. We bring each vehicle in after it has consumed 125 gallons of gas. In addition to routine checks, i.e., throttle, carburetor, timing, it provides an accurate gage of mechanic's ability, and we regard this as another major advantage of the dynamometer."

END

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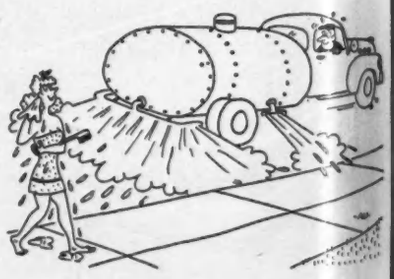
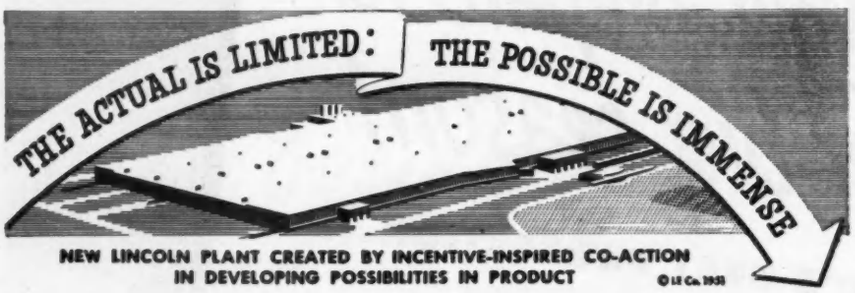


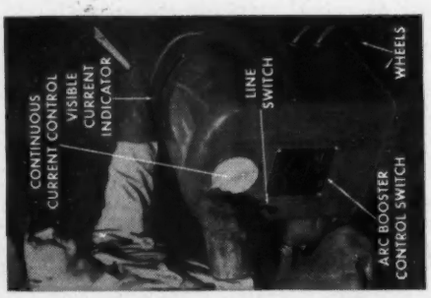


NEW LINCOLN PLANT CREATED BY INCENTIVE-INSPIRED CO-ACTION IN DEVELOPING POSSIBILITIES IN PRODUCT ©LE Co. 1951

FAST, DEPENDABLE, LOW-PRICED "Fleetwelder" simplifies your welded repairs

- "Arc-Booster" Gives Easiest Welding. "Fleetwelder's" automatic arc striking with the unique "Arc-Booster" and its unusually stable arc allow even the beginner to make high quality, professional welds on heavy frames, axles or on light body work. Helps stretch your man-power hours farther . . . cuts time and costs on fleet repairs.
- Versatile. Handles a host of jobs . . . welds, cuts, solders, brazes and heats for bending all kinds of metals.
- Simple to install. Operates on single phase power . . . has wheels for quick portability to any part of the shop.

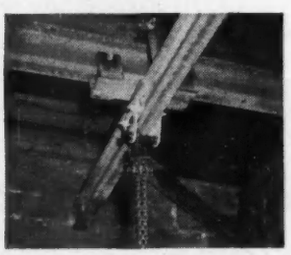
Low in Price. "Fleetwelder" 200 AC with famous "Arc-Booster," handles ¼" to ½" rods. Built with Lincoln's world famous, industrial-type construction . . . yet sells for less than other welders of comparable capacity.



FOR FAST, LOW COST REPAIRS

Repairs Cracked Rim of heavy-duty truck wheel with Lincoln "Fleetwelder." Saves cost and delay of securing replacements . . . keeps fleet operations on schedule.

BUILDING MAINTENANCE EQUIPMENT



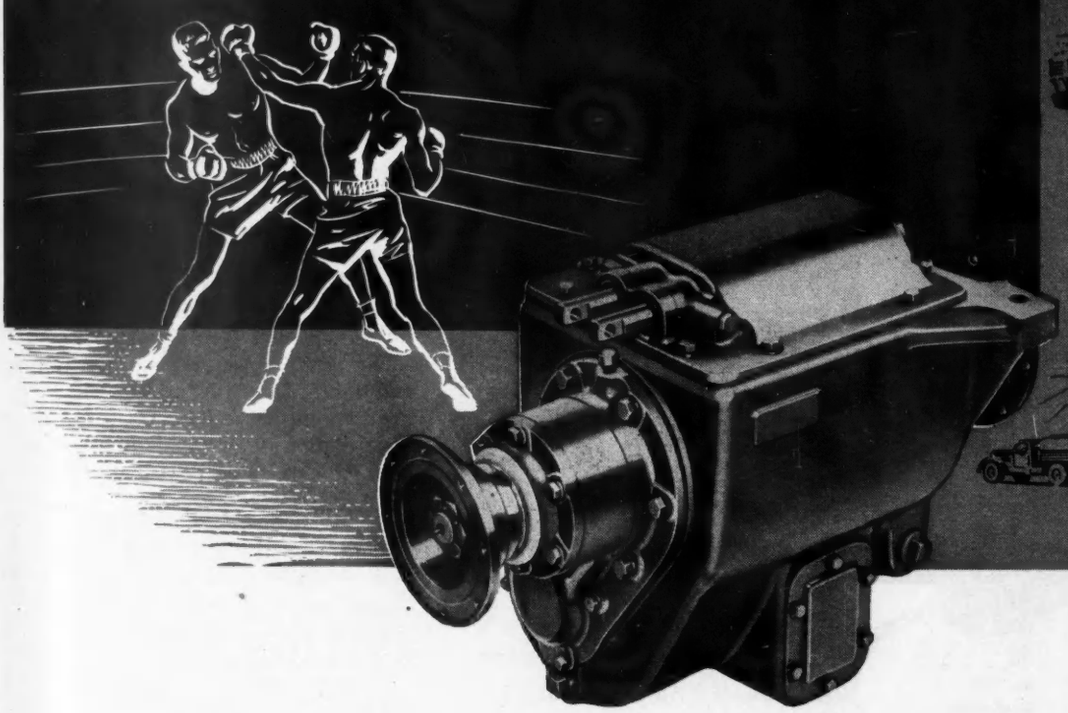
Handy Hoist for speeding maintenance operations is fabricated easily from I-beams and using conventional chain lift . . . one of a hundred useful tools you can build at low cost with the "Fleetwelder."

HERE'S EASY WELDING THAT REALLY CUTS COSTS

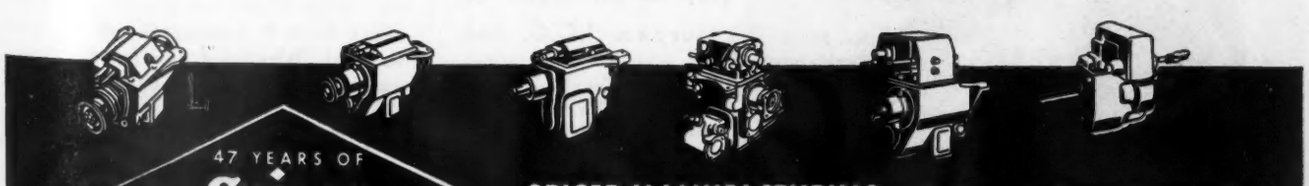
Full details on "Fleetwelder" 200 AC are available in free bulletin 1301. Write on your letterhead to Dept. 323,

THE LINCOLN ELECTRIC COMPANY
CLEVELAND 1, OHIO

Spicer auxiliary transmissions will keep your trucks light on their feet



The correct speed for every type of terrain; the most efficient pulling power for every weight class; the right type of unit for each particular job—these are advantages offered by the wide range of Spicer 3-Speed Auxiliary Transmissions. Let Spicer Engineers help reduce your cost per ton mile.



47 YEARS OF Spicer SERVICE

TRANSMISSIONS
TORQUE CONVERTERS

SPICER MANUFACTURING • *Division of Dana Corporation*
TOLEDO 1, OHIO

PASSENGER CAR AXLES • CLUTCHES • PARISH FRAMES • STAMPINGS • FORGINGS
UNIVERSAL JOINTS • SPICER "BROWN-LIPE" GEAR BOXES • RAILWAY GENERATOR DRIVES

Rapes of Wrath

Continued from Page 51

construct a facility for a 25- to 30-year life and then throw it away after 10 years, because of increasing loads permitted with no maximum.

2. To protect highways from excessive wear and tear. "Pumping" is a primary damage factor on concrete pavements, accelerated by heavy truck travel. The taxpayers' 40-billion dollar investment in the highways should be protected. The highway freighters, constituting less than 1 per cent of the total number of highway users, should be prevented from wrecking this investment.

3. To protect other highway users from annoyance, delays and inconvenience of big trucks in traffic. One such vehicle has the same effect in producing congestion as two to four passenger cars.

4. To promote highway safety. Heavier loads on existing vehicles mean slower speeds on grades, increasing overtaking and passing hazards. Big trucks have a higher accident rate than ordinary vehicles.

5. To stop the steady increase in truck sizes and weights. Today there is over 10 times as great a percentage of all axle loads of 18,000 lb or over as 20 years ago. Where will it stop?

6. Highway subgrades, built to last 75 years, will become obsolete if a ceiling on regulations is not established and frozen.

On the other hand, arguments of those who would favor eliminating all state maximums below a certain level, allowing states to exceed this standard, where they wish to do so, seem to simmer down to these:

A floor is necessary on the states' size and weight maximums because—

1. Movement of transport is a primary function of highways. No state should offer an arbitrary bottleneck to such movement by setting maximums below a certain reasonable limit.

2. Maximums in one state may be justifiably higher than those of another, state due to better road construction. Why penalize the first state by holding down its standards? Intrastate transport would suffer thereby.

3. Better to build highways to suit the vehicles, rather than limit the vehicles to fit the highway.

4. We don't know what an equitable ceiling is, and the AASHO standard is not realistic. The 18,000-lb limit is based on tests made 29 years ago. "Pumping" and pavement failure are not caused primarily by trucks but are due mostly to poor highway construction.

5. Don't lower state regulations to preserve highways only. Highways, like industrial machinery, should be expected to wear out and be used up in process of making a profit, not preserved like some historic relic.

6. Supposing regulations of 20 years ago were frozen at a ceiling and in effect today? Commerce would have suffered. Why do it now and handicap our future?

Case of the Hinged Bumper

A GOOD example of the attitude of some who cry out in wrath against non-uniformity in state laws is provided by the following case of an interstate trucker.

(TURN TO PAGE 156, PLEASE)

A GOOD TURN DESERVES
TRUK Grote LINE
DIRECTION SIGNALS
Compact and rugged construction, easily installed, positive and trouble-free operation. Self-cancelling — cannot interfere with steering or be thrown out of time. No relays to adjust or burn out. Pilot lamp is "light-out" warning. Most practical switch on the market.
H. D. TRUCK CONSTRUCTION
Switch and lamps are furnished in complete sets or as separate replacements. All lamps have long range lenses made of Grotelite hatterproofed plastic — for brighter warning, less replacement. Sets for bus, truck and truck-trailer combinations — all meet or surpass I.C.C. and S.A.E. specifications.
No. 212 — Fender or bracket mount
Red, amber or clear lens
No. F-212 Flush panel mount
No. 240 Single face fender or frame mount
No. 240-D Double faced front fender lamp
No. F-240 Flush panel mount
Lamps singly and in complete sets with flashers for all bus, truck and tractor-trailer combinations. Write for catalog.
THE GROTE MANUFACTURING COMPANY, INC.
BELLEVUE, KY.
Established 1901

LISTEN for the deceitful words that promise new freedoms but promote slavery.

Freedom is never lost by a single act. It is stolen by innocent sounding words that breed doubt, suspicion, and dissatisfaction.

Communism thrives on sugar-coated promises with pink centers.

Our country will remain free, only if we LISTEN for the lies, the half-truths . . . and expose them.

BOHN ALUMINUM & BRASS CORPORATION

EXECUTIVE OFFICES • DETROIT 26, MICHIGAN
SERVICE DIVISION • HOLLAND, MICHIGAN

AUTOMOTIVE REPLACEMENT PARTS

Every Sunday Afternoon on NBC Television . . . "American Forum of the Air"
Consult Your Newspaper for Time and Station

BOHN

Rapes of Wrath

Continued from Page 154

A fruit and vegetable hauler of Pompano, Fla., tells the following story about a load of poultry which started out from Omaha, Neb.: First, his driver was stopped in Iowa, because the Iowa number carried on the side of the trailer was only 1½ in. high and the State law specifies 2 in. A Missouri inspector held him up for an hour arguing about a state-issued card which the driver was supposed to carry. In Illinois, he was stopped and weighed—300 lb overweight on the drive axle—another delay. In Cairo, Ill., another 100 miles farther along, the truck was weighed again and 2 hours more sacrificed. In Alabama, he lost 6 hours and $107 fine because his vehicle was 6-in. over the 45-ft length limit.

The hauler explained that, to guard against repetition of the over-length troubles, he had a blacksmith cut off the bumper. Then he started his driver off with a load of beans and peppers for Minneapolis. In Wisconsin, they nabbed him for not having a front bumper. In desperation, he had a pair of hinges fixed to the bumper—it hides in Alabama but comes out in Wisconsin!

Professor John S. Worley of the University of Michigan seems to feel, as many of the truckers do, that heavy loads are not the sole cause of damage to concrete pavement. According to this expert, "such is far from the truth. The root of the trouble is poor construction or neglected maintenance or both."

On the other hand, the American Automobile Association charges that, "billions of dollars' worth of the nation's finest highways are being pounded to pieces by overweight and overloaded vehicles." And many state officials are outspoken with sentiments similar to those of Sam Hadden, Indiana State Highway Commissioner, who charges that, "a greatly augmented and still increasing number of heavy trucks and trailers, operating for long distances at high speeds, is destroying our roads faster than we can find the money with which to replace them."

Standards Going Up

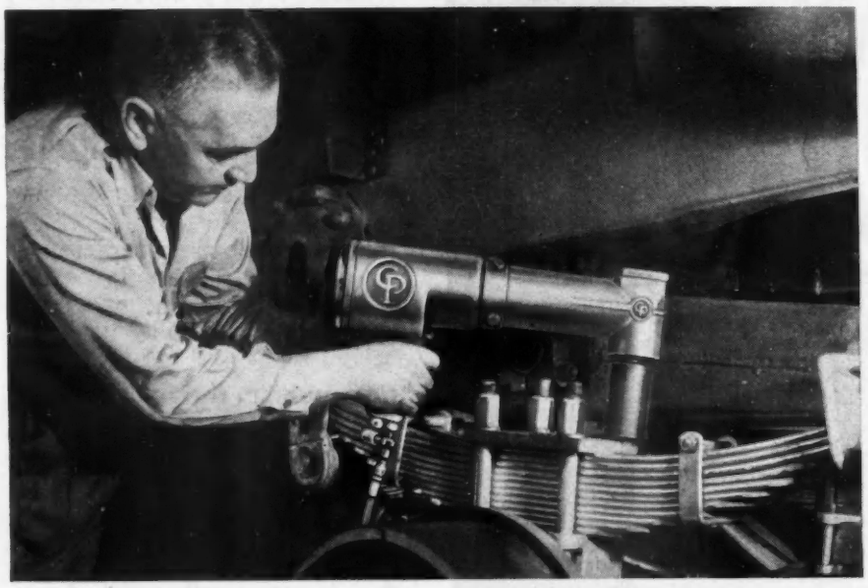
It is true that trucks have been growing rapidly in size and weight. It also is true that state size and weight maximums have been increasing over the years. The American Association of State Highway Officials has developed a standard set of size and weight maximums which are urged by them and many other groups for adoption in all states. As shown in the accompanying table, this code was liberalized somewhat in 1946 by relaxation in length (which, in turn, permitted a greater gross load).

Last year, Arizona, Kentucky, Mississippi, Rhode Island and Virginia relaxed their regulations and the trend is continuing; as evidenced by the bills currently being considered in 15 states, which would relax restrictions further. Only six states are considered tightening up.

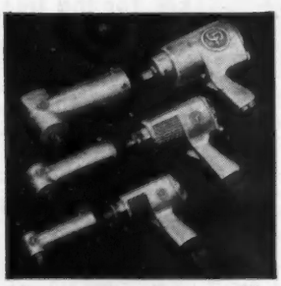
Here's how the various state regulations compare with the AASHO code today (District of Columbia included):

Width	5 higher,	44 same,	0 lower
Height	25 higher,	24 same,	0 lower
Length	4 higher,	11 same,	34 lower
Axle Weight	14 higher,	35 same,	0 lower
Gross Load	7 higher,	11 same,	31 lower

(TURN TO PAGE 160, PLEASE)



Compactness of angle head permits nut running with minimum clearance.



All three sizes have readily detachable angle heads.

it's merely a matter of seconds

to run nuts, bolts or cap screws with a CP Air Impact Wrench. Controllable power assures running on nuts and cap screws to proper tightness. Air consumption is low, the average being about that of a grease gun.

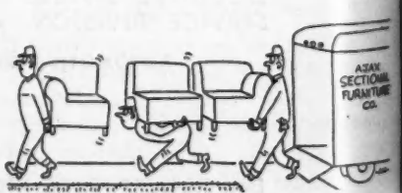
The only complete line with detachable heads for awkward-spot jobs, CP Impact Wrenches are made in these capacities: CP-730 to ½" bolt size; CP-750 to ⅝" bolt size; CP-770 to 1" bolt size.

For heavier jobs on trucks and trailers, the CP-365, capacity to 1¼" bolt size, is available in straight or angle head models.

CHICAGO PNEUMATIC TOOL COMPANY

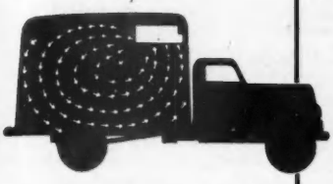
General Offices 8 East 44th Street, New York 17, N. Y.

AUTOMOTIVE SERVICE EQUIPMENT • FENDER IRONS • ELECTRIC TOOLS
AIR IMPACT WRENCHES • AIR COMPRESSORS • PNEU-DRAULIC PUMPS

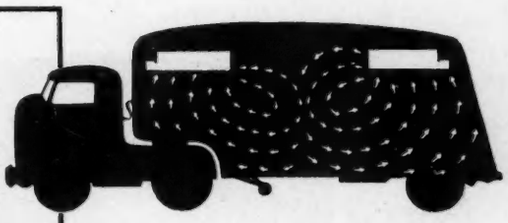


REFRIGERATION COSTS!
Foster-Built Dry Ice Truck Bunkers

No Maintenance · Assured Refrigeration



For Route-Trucks
AND
Over-the-Road-Haulers



Here's new low-cost truck refrigeration that will save you real money. The initial cost is rock-bottom—just a fraction of what mechanical refrigeration would cost you. The installation is simple—two studs in the ceiling and two studs in the wall of the truck, and one small wiring operation. Foster-Built Bunkers are lightweight, too (as little as 38 lbs. net), which means bigger payloads for you. They can be removed in two minutes when refrigeration is not required.

HIGH REFRIGERATION EFFICIENCY

The Foster-Built Dry Ice Truck Bunker assures you of constant, uniform refrigeration. The main body of the bunker has a 2-inch false bottom constructed as a refrigerating air duct. The Dry Ice rests directly on the top plate of the air duct. A low amperage sirocco-type fan forces the air along the length of the chilled metal plate, effectively lowering the temperature of the air, and then circulates the chilled air throughout the body of the truck.

SAVES 25% ON DRY ICE COSTS!

In addition to offering tremendous savings over mechanical refrigeration, Foster-Built will cut Dry Ice bills *25% or more* for truckers who are merely throwing Dry Ice on the top of their loads.

CALL MONROE 6-6880, CHICAGO, OR . . .

Mail COUPON today!
Get the Facts—Actual Case Histories

Foster-Built Bunkers, Inc.
757 West Polk Street
Chicago 7, Illinois

CCJ

Gentlemen: Please send me free 4-page illustrated booklet with actual case histories on Foster-Built Bunkers.

Name _____

Firm Name _____

Street _____

City _____ Zone _____ State _____

DRY ICE TRUCK BUNKERS

Rapes of Wrath

Continued from Page 156

Five states are substantially the same as AASHO on these limits. Eight states have the same and higher limits and nine states have the same and lower limits. The remaining states have higher, same, and lower, mixed.

The following ranges of limits are found today:

Width	96 to 104 in.[1]
Height	12½ to 14 ft.[2]
Length	45 to 65 ft.[1]
Axle weight	12,000 to 22,400 lb.
Gross weight	42,000[3] to 120,000 lb.[4]

1—No restriction in Nevada.
2—No restriction in Nevada, Maryland and Massachusetts.
3—Kentucky and Tennessee.
4—Michigan.

Many changes have been made in the past both to liberalize state laws and to bring them more into conformity with the AASHO standards. For instance, in 1941, Kentucky was termed the chief "bottleneck" state, with a gross weight limit of 18,000 lb. Today it is 42,000 lb.

Alabama and South Dakota limited gross weight to 30,000 lb. Today the limits are 53,900 and 64,600 lb. In 1942, seven states prohibited full trailers for practical commercial use. Today, this has shrunk to four states. Some states have lowered limits, as well, to bring them closer to the AASHO standards.

The range of limits in 1941 was somewhat greater than we find today. They varied as follows:

Width	96 to 108 in.[1]
Height	11 to 14½ ft.[1]
Length	30 to 65 ft.[2]
Axle weight	12,000 to 22,400 lb.[1]
Gross weight	18,000[3] to 108,000 lb.[4]

1—No restriction in several states.
2—No restriction in Nevada.
3—Kentucky.
4—Louisiana.

There are no federal size and weight laws. However, proposals have been made recently for federal control to promote first one, then the other of the basically different ceiling and floor philosophies.

First H. R. 7637 would have brought federal intervention wherever state regulations on sizes or weights were judged to be obstructing interstate traffic, thus getting rid of "bottlenecks" to interstate truck transport.

Second, an amendment to the Federal-Aid Highway Act would have denied federal aid to states which permitted more than 18,000 lb per axle, in the interest of protecting future highways from damage by greater loads.

These did not become law, but they indicate the degree of interest being given to the matter on both sides of the question.

Basically, the questions to be reckoned with are:

1. Should laws prescribing maximum truck sizes and weights be uniform among the states?

2. If not, should a set of national size and weight standards be established as a floor or as a ceiling for the various states?

3. Should state standards be frozen for all future time? The Bureau of Public Roads recommends freezing the 18,000 lb maximum axle load.

What's the Answer?

IT IS reasonable to assume that the current wrath over sizes and weights will wax warmer. There are two good reasons for this assumption. First, the emergency curtailment of use of steel and other materials promises to slow down street and highway improvement program. In view of ODM Director Wilson's pronouncement that "little steel can be expected for new highway

(TURN TO PAGE 162, PLEASE)

THE WINNER! Again and Again

THE WINNER: Traps an average of 290% more dirt and engine-wrecking abrasives, including particles measured in microns—.000039".

THE WINNER: Provides an element with up to 10 times more filtering area than ordinary filters.

THE WINNER: Won't warp, distort or disintegrate in water. Leaves oil additives *in*.

THE WINNER with fleet operators . . . because Purolator* Micronic gives more . . . does more . . . helps insure a better-performing, longer-lived engine.

THE WINNER with service and repair men . . . because with the Purolator Micronic* with New Dirt-Check Windows it's quick and easy to check the filter, install new refills.

CUT REPAIR BILLS and down time. Your supplier has a Purolator Micronic refill unit for practically every vehicle or original filter. Phone him for complete information. *Reg. U.S. Pat. Off.

PUROLATOR PRODUCTS, INC.
Rahway, New Jersey and Toronto, Ontario, Canada
Factory Branch Offices: Chicago, Detroit, Los Angeles

PUROLATOR
MICRONIC OIL FILTER
"FIRST IN THE FIELD OF FILTERING"

FLEET OPERATORS REPORT:

"Our Altes Air-Vayor equipment is subject to constant rough, tough treatment. Short city hauls, heavy loads and constant stop and start driving put a real strain on shock absorbers. We solved that problem by equipping our Altes Air-Vayor units with Gabriel Shock Absorbers."—Altes Brewing Co., Detroit.

• • •

"The main reason we have been using your shock absorbers is because of their dependability and extremely long life. After we put Gabriel shock absorbers on a truck, we are able to forget the shocks because they require no maintenance whatsoever. When we trade in a truck, we usually take the shocks off and install them on the new truck. They will outwear most trucks."—Brown-Graves Co., Akron, Ohio.

• • •

Gabriel shock absorbers actually cut fleet operating costs. Their rugged oversize construction, plus Gabriel's advanced design provides exceptionally long shock absorber life. Many users report unusual miles of service per set! Reduced maintenance costs on front end and springs further add to your savings. Learn how Gabriel truck and bus shock absorbers can put operating costs onto the profit side of your ledger. Write today for Gabriel's new booklet, "Cut Operating Costs 12 Ways".

THE GABRIEL COMPANY
1523 EAST 45th STREET
CLEVELAND 3, OHIO

GABRIEL
TRUCK & BUS
SHOCK ABSORBERS

Rapes of Wrath

Continued from Page 160

work, other than access roads to new defense projects," highway engineers, and others who maintain that heavy trucks are breaking up our roads, will become even louder in their protests as new construction and reconstruction bogs down.

It is universally recognized that our highway network is in need of substantial repair. Present level of construction is rated at two-thirds that needed over a considerable period of years to bring our roads into balance with minimum needs.

But on the other hand, the increasing demands on truckers to haul more and more goods and materials in this mobilization period will only magnify the opposition to any and all restrictive regulations.

Defense Transport Administrator Kundson's recent letter to the state governors requesting them to eliminate all unjustifiable highway transport barriers is the "opening gun of what may develop into a full-scale barrage," as the American Association of State Highway Officials terms it.

Mr. Knudson suggests that all states below the AASHO code come up to it, and those above it stay where they are. He points to the existing shortage of railroad freight cars, more acute than ever before, making it necessary for trucks to take on a still greater portion of military and civilian freight. And the current shortage in railroad capacity is expected to become more acute as seasonal increases in demand make themselves felt later on this year.

It is said that merely bringing limits up to the code east of the Rockies would give common carriers in those states a 20 per cent boost in capacity of the existing vehicles.

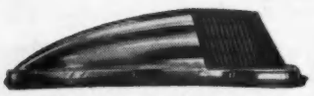
The answer to the controversy will probably never be provided to the complete satisfaction of everyone. That should be axiomatic. However, it is true that there lies an equitable compromise somewhere between the two schools, the "ceiling" boys and the "floor" boys. That may be the approach to something of a regional rather than a national standardization, but with perhaps a closer similarity between all states' regulations and a national standard.

For the immediate period ahead, it appears that we can expect some relaxation of regulations in a few states; but probably not any wholesale upward shift, such as suggested by DTA. In every case, it should be everyone's concern to make certain that there is a net gain to our transportation network in whatever is done—that any truck bottleneck relieved by a shift upward in size and weight maximums is not more than offset by a resulting weakening of the highway system, or that any reduction in limits is not more than offset by a loss in overall transport capacity.

END

Please Resume Reading Page 52

They're made by Arrow . . . they're the finest



No. 39 Streamlined marker and clearance light. Can be used on corners in place of two lights, on fenders as parking lights. Available in three standard bases to fit practically any body curvature. Three finishes—black, chrome or satin aluminum—and six lens-colors.

No. A-270 Flush-mounted marker light. Polished stainless steel, with red or amber plastic lens 2¾" in diameter. Flat back allows bulb socket to be recessed.

No. V35 Vapor-proof flush-mounted marker light. Black or chrome-finished rim with red, amber or green glass lens 3" in diameter. Threaded socket connection; ¾" coupling.

No. 47 Armored clearance light. The housing projects completely around lens for maximum protection. Finished in baked satin enamel, with red, green or amber glass lens. Flush, flat base; felt mounting gasket and rubber socket insulator supplied.

Arrow makes a complete line of dependable "Safety after Dark" equipment—headlights, marker lights, fog lights, tail lights, directional signals, switches, mirrors, reflectors and flares. All Arrow products are soundly engineered and manufactured for long, trouble-free performance. *Sold only through jobbers.*

See your jobber salesman today. Ask him to show you the complete new Arrow catalog.

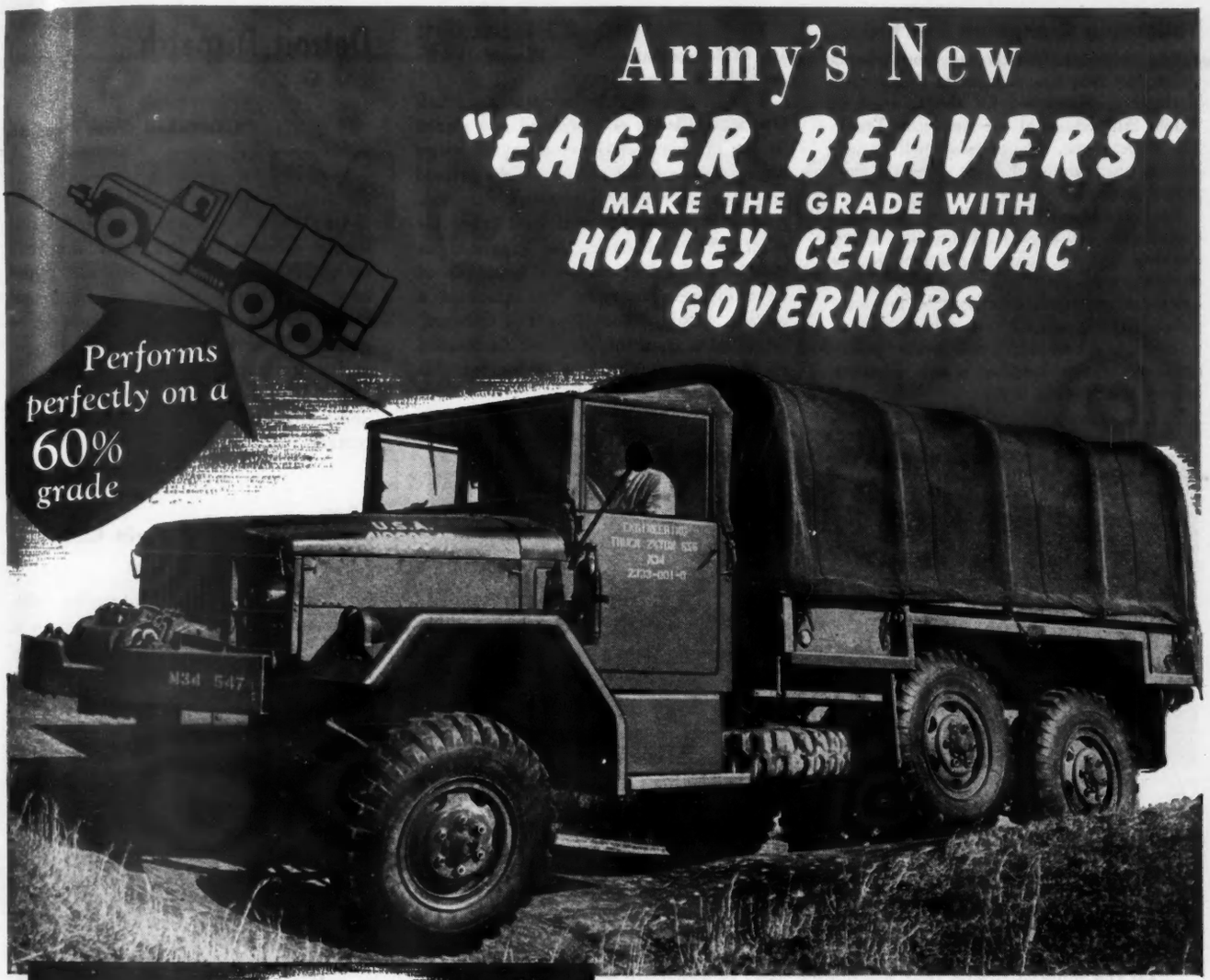
Arrow Safety Device Company
Mount Holly, New Jersey

ARROW
SAFETY AFTER DARK

Contracts to be Shared

Small business will share the ordering of Uncle Sam as defense contracts are let, according to the office of the Secretary of Defense. The rate of letting contracts for defense procurement in January more than doubled the total contract figure for six months previous. The trend is to continue. During the same periods, a noted increase in the number and amount of contracts going to firms employing less than 500 persons has been noted. In addition, many small business enterprises receive defense orders in the form of sub-contracts from the larger firms. The report mentioned that in the tank group alone, there are over 3,000 sub-contractors listed.

Army's New "EAGER BEAVERS" MAKE THE GRADE WITH HOLLEY CENTRIVAC GOVERNORS



As standard equipment on Eager Beaver Army Amphibious Trucks (built by Reo Motors, Inc.) the Holley Built-In Centrivac Governor proves itself on land and water—on rough terrain or incredibly steep grades.

It governs speeds perfectly—from full load to no load—gives smoother, steadier flow of power, responds instantly to every load and road contingency—without surging, choking or stalling. Engine accelerates perfectly with wide open throttle until governed speed is reached.

The Centrivac Governor eliminates power loss—improves economy—steps up operating efficiency—reduces wear and tear on driver's nerves.

Also available for standard truck engines as a sandwich type (to fit standard carburetors) or as built-in complete Holley Carburetor and Governor Unit. Write or wire for the facts on Centrivac—the most advanced type of economical governor control yet developed.

HOLLEY Carburetor Co.
5930 VANCOUVER AVE.
DETROIT 8, MICHIGAN

AUTOMOTIVE EQUIPMENT AND ACCESSORIES

Tailgating Campaign Started

The national "Share the Road" campaign for 1951 has chosen its theme Stop Tailgating. Sponsored by the Council of Safety Supervisors of the American Trucking Associations, the campaign will be conducted on a national scale through individual fleets.

Each truck or trailer pledging campaign cooperation will display an attractive decal, showing that the driver has agreed to the share-the-road principle. In addition, the campaign material is directed to the individual driver, seeking his cooperation to promote highway safety and better public opinion through keeping a safe distance behind the leading truck.

For each fleet, there is a large 10 x 17 in. "Professional Drivers Pledge" which each truck driver signs.

To participate in the campaign, a Truck Operators Pledge is completed and signed by the president of the company. Supplies for his fleet are ordered on a form printed on the reverse side. The active participation in the campaign will start from this point. Driver meetings are suggested as good activities, with the stress being placed on willingness to make the campaign a success. A film "Too Close For Comfort" is available from the National Association of Mutual Casualty Companies for this type of activity.

EASIER, QUICKER WAY TO REBUILD CARBURETORS

Hailed by Fleet Operators & Mechanics

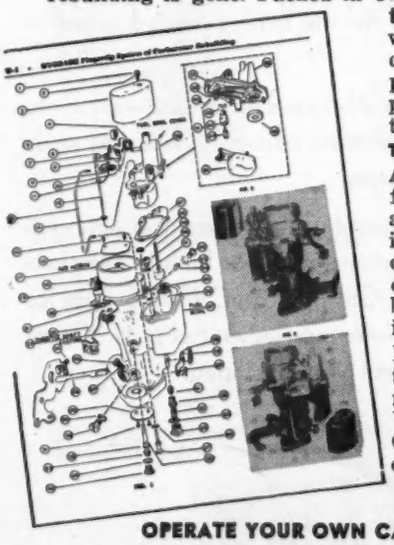
The HYGRADE Fingertip System

The Fingertip System makes a carburetor expert out of any competent mechanic in 1 week's time.

Lops as much as 25% off the time sheet for shops that are already rebuilding carburetors.

You'll have real insurance against "down-time" because you *know* that every part that wears has been replaced with a *brand new part* from the Hygrade kit. Without leaving the shop—in a matter of hours—every mechanic can learn to dis-assemble and rebuild a carburetor.

All the mumbo-jumbo that mechanics used to associate with carburetor rebuilding is gone. Packed in every kit are clear step-by-step instructions, arranged in sequence of assembly which tie in with large exploded-view drawings and photos. The location of parts on these pictures is so easy that parts practically fall into place by themselves.



THE HYGRADE FINGERTIP KIT

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Detroit Dispatch

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mercial vehicles, at some future date. Most tanks now are equipped with torque converters, and their use may be extended to military trucks. While cost is admittedly not an important factor in military vehicles, experience gained in manufacturing techniques and actual operational use eventually might lead to development of an economically feasible automatic drive for certain truck applications.

Aerovan Helps Twin Coach Drop Prices

Because of an arrangement with Fruehauf to build coach bodies on a mass production basis, Twin Coach Co. has been able to reduce its prices on buses from 12 to 10 per cent. Fruehauf will supply Twin Coach with its Aerovan bodies, modified for use as motor coaches. Bodies are built in large volume, resulting in sizeable savings over the semi-custom building of most bus bodies. The new line of buses will be produced in inter-city models and passenger city types, ranging in size from 30 to 52 passengers.

ICC Studies Kolowich's Stock Deal

A controlling interest of 270,000 shares in the Denver-Chicago Truck Co., Inc., has been acquired by George Kolowich, president and general manager of Detroit and Cleveland Navigation Co. of Detroit. Kolowich owns about 20 per cent of the stock in D & C, which until this year has operated passenger and freight boats between Detroit and Cleveland and Buffalo. There is some doubt whether the boats will operate this year, however. Railroad and motor trucking firms have protested the purchase, saying that Kolowich did not get approval from ICC to acquire the stock. He has proposed to sell 150,000 shares of Denver-Chicago stock to the D & C lines as an investment, but has stated that he has no plans to combine the freight facilities of the trucking company with those of D & C. ICC has pending a decision whether to permit Kolowich to retain the truck company stock and sell part of it to D & C, or whether to order him to dispose of it.

END

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